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AUGUST 1959

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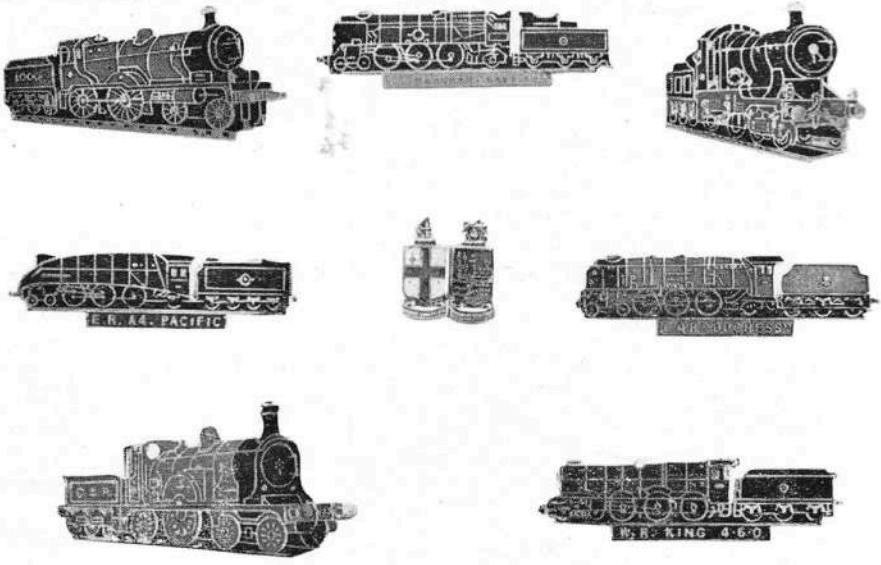

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TRAINS ILLUSTRATED

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We are grateful to the many readers who have expressed appreciation of our efforts to produce a magazine last month. We regret that an unusual format was necessary, but in the time available following the crisis in the printing industry dispute there was a limit to the number of pages that could be printed ; the feelings of those who have each year's issues bound were carefully considered, but it was felt that the great majority of readers would prefer as much content as possible and this was one of the factors that decided us to use a larger page size than usual. Readers will appreciate that this month's issue has again been produced under difficulties, but we are happy to return to our usual format and number of pages.

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front cover

King's Cross arrivals—Class "B2" 4-6-0 No. 61614 "Castle Hedingham" on a Cambridge train and Class "B1" 4-6-0 No. 61408 on a Grimsby service. [F. Spencer Yeates

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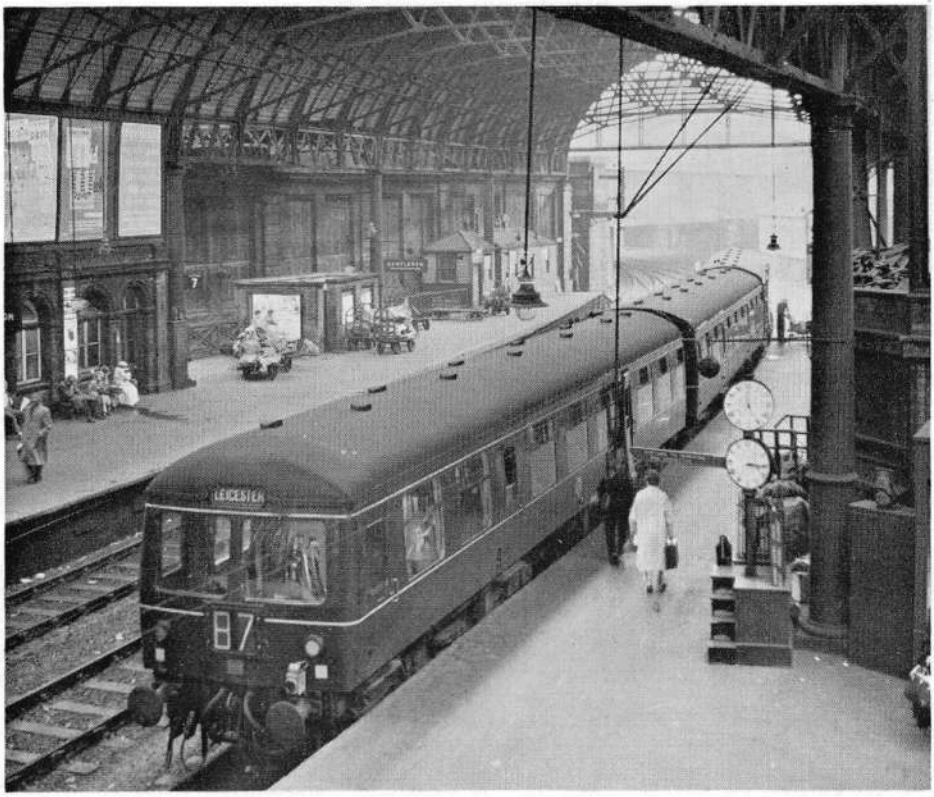


A three-car Cravens diesel multiple-unit forming the 3.15 p.m. to Leicester at Birmingham (New Street) on July 12, 1958. [M. Mensing

TALKING OF TRAINS

the editor's news and views

Reappraisal is completed

WITH the publication of the B.T.C's. Annual Report and Accounts for 1958 and the recent presentation to the Government of British Railways' reappraisal of its Modernisation Plan, the future of railways in this country is likely to be a topic of high-level debate this summer. It is good to detect hints of a more aggressive attitude from the B.T.C. in face of constant reminders of accumulated deficits and niggling for economies before modernisation schemes have had a chance fully to fructify (for the 1956 White Paper warned that "decades of under-investment" in the railways could not be overtaken and a complete revolution be achieved quickly). Addressing the Manchester Luncheon Club early in June Sir Brian Robertson was emphatic that there would be nothing "agonising" about the B.T.C's. reappraisal of its plans. "It will state again our view," he said, "that the railways have an essential role, and will substantiate that view by offering confirmation of it. It will also show that they can in due course attract sufficient revenues to cover their costs, given freedom to do so. They have received help from the Government, and I do not deny that they may need more help. The re-appraisal will give our views both as to the future role of the railways and as to the shape of the system needed to carry out this role. This will entail a considerable measure of rationalisation, but it will not mean an emasculation which is neither justified by the economic prospects nor desirable in the public interest." In the same speech Sir Brian issued a blunt reminder that there is a chasm of difference between the hard-dying and seldom corrected public notion that British Railways are still officially a public service, and the conception that the Government has created the railways as a self-supporting competitor in a free transport market. If the country requires its railways to be a public service, Sir Brian observed, there would be no objection from the B.T.C. but

it would be impossible to make revenue match expenses. On the other hand, if the railways must be run as a commercial undertaking, while the utmost consideration will be given to public interest, it is unfair that they should be subjected to pressure on behalf of sectional interests, to abuse for the level of their charges, or to interference in the conduct of their industrial relations or of any other matter properly within the orbit of management. Clear presentation of this choice, in our view, needs constant repetition. At present, one gets the impression too often that the railways are expected to be self-supporting and competitive where few but they suffer in the short term if they lose the contest because they must subsidise uneconomic public services also; but that it is a very different matter if hard economic facts touch the purse of large numbers of the public. Thus rural branch after branch can be shut down, as Westminster and Whitehall are fairly well sound-proofed from the distant protests of a few countrymen, but the Transport Tribunal could not bring itself to recommend immediate withdrawal of the early morning fare concession, which — if B.R. is a commercial undertaking — is quite insupportable in the present state of B.R. finances and today's economic conditions generally. And thus the Parliamentary Secretary to the Ministry of Transport & Civil Aviation, speaking at the inauguration of the Kent Coast electric services, tended to write off the mid-20th Century railway as a freight carrier, but was most eloquent of its vital necessity as a transporter of peak-hour commuters, one of the railway's particularly uneconomic burdens, though he did invite the public to see that they could no longer be carried at a loss.

The costs of transport

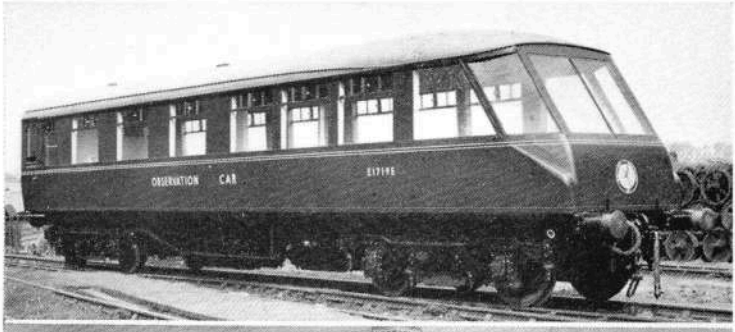
IN another June speech Sir Brian Robertson reiterated his belief that modern railways could be made to pay their way and had some interesting things to say on the problem of ascertaining the true cost of each individual service. As an example of the occasional deception of appearances, he quoted the Bletchley-Buckingham service, on which diesel railcars in the last two years had increased receipts by 468 per cent and reduced actual train running costs by 28 per cent; yet a proper analysis of the economics of the line showed that the true costs of the services were still approximately double the receipts. The over-riding difficulty of costing concerned the size and extent of the expenses common in some degree to all traffics, yet which could not readily be apportioned among them — for example, track and signalling, which amount to some 20 per cent of the costs of a railway system as a whole, but which are impossible to debit to each category of traffic save on a very arbitrary statistical basis. The same applied to administrative overheads. A further difficulty was the extent to which important classes of expense were common to related flows of traffic, making it necessary to indulge in a whole series of allocations. Thus a locomotive and its crew might be used from day to day, and sometimes during one day, on a wide range of different duties. As a consequence of the extent of the joint expenses of one kind and another in railway operation, there was often a big difference between the costs which might be attributed to a particular operation or service and, on the other hand, the costs which would be saved if the operation or service in question were to be permanently discontinued. Another factor to be allowed for in establishing the remunerativeness of a service was its value as a feeder to the rest of the system. Sir Brian also pointed out that for the purpose of traffic costing, total cost was regarded as the expenditure involved in long-term provision of a given service. Therefore it included not only an allocation of the overhead expenses of all sorts but also such items as proper allowance for the replacement of assets. Calculated in this way, total cost could be quite an unreal yardstick for measuring the cost of an individual operation, though it was accurate enough for the operations as a whole.

Businessmen and B.R.

THE latest issue of *British Transport Review* publishes the very enlightening results of a survey into businessmen's attitudes to various forms of transport, in which it had collaborated with Birkbeck College and the British Institute of Management. The surveyors consulted 90 senior executives of sixteen major industrial concerns in London, Manchester, Newcastle, Felixstowe, Edinburgh and Glasgow. At least four of these companies strongly preferred all their employees to travel by air on business, because it cost less in terms of time lost to the employer en route and in overnight lodging; most firms allowed their senior executives free choice, but only a proportion deliberately chose rail even for junior staff. Of the individual executives questioned, only 47 per cent were favourable to rail travel in principle and 39 per cent were against it, as compared with 64 per cent for and 19 per cent against air travel and 64 per cent for and 25 per cent against the use of private cars. On the other hand, only 13 per cent preferred plane comfort to that of a train and 87 per cent considered the train more comfortable than a car. Not unexpectedly, trains incurred the strongest criticisms, on the grounds of dirt, poor service and lack of information at stations and en route, unpunctuality and failure to improve on point-to-point speeds

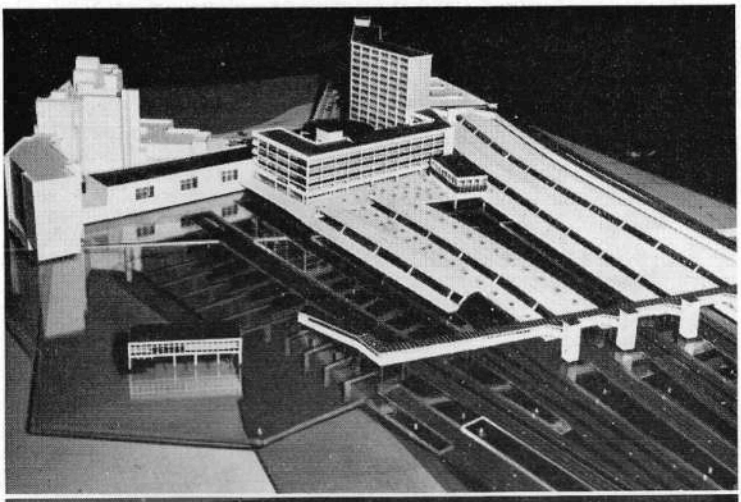
of the 1930s — or even earlier. Only two of those questioned could see no need for improvement and only one in four would concede that they had noticed any improvements in recent months. On the other hand, there was basically a strong feeling in favour of train travel for the relaxed atmosphere it could create, given comfort and good service. *British Transport Review* is refreshingly outspoken in its conclusions from the survey. It admits that first class rail travel has lost the status it once held because of lack of personal service, and that the kind of acceleration that sends railwaymen into a flurry of publicity hand-outs, (and railway journalists in search of superlatives) is not always so heart-fluttering to the businessman viewing it against the speed of air transport or the door-to-door convenience of his car. The businessman, as the *Review* says, is likely to be the most demanding of B.R's. customers; if he can be satisfied, anyone can. He is also a very valuable regular customer; moreover, other railways in the world, notably in the U.S.A., think that there is an important psychological point to be gained by impressing him favourably on his personal travels, in view of his potential as a freight customer also. We would regard him as one of the most important of B.R's. passenger clientele. As we have pressed for a long time past and as the *Review* concludes from its survey, "there is a demand among top-level businessmen for something better than anything now offered in the way of fast and luxurious service. They expect individual adjustable seats; they want the absence of noise and dirt which double-glazed windows and better insulation can give." Our slow-developing multiple-unit Pullmans are a start, but a recent visit to the German Federal Railway, described elsewhere in this issue, suggests other less expensive facilities that are sometimes coolly viewed by railway officers in this country on grounds of cost or lack of demand. For example, only the train has the space conveniently to reduce some of the loss of working hours en route by the provision of a secretarial service — and perhaps a con-

'CORONATION' BEAVER-TAILS REBUILT



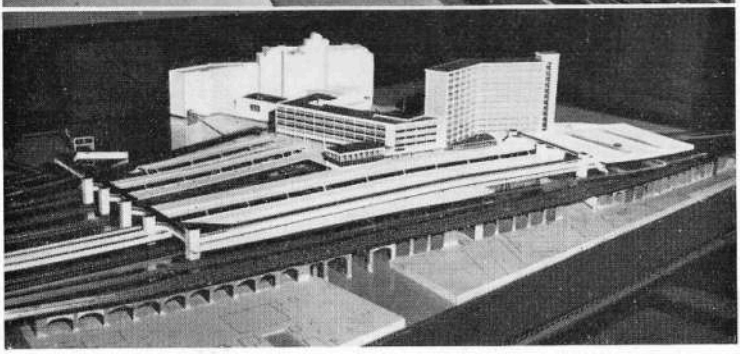
The ex-" Coronation" beaver - tail observation cars on the Glasgow - Fort William - Mallaig service service have been rebuilt with new rear windows and the former mails compartment removed. There are now 28 movable armchairs in each coach. Seats in the observation cars cost an extra 3s. 6d., or 2s. 6d. between Fort William and Mallaig and may be reserved in advance. The services on which the cars run are the 10.20 a.m. Glasgow (Queen Street) - Fort William and 4.40 p.m. back ; and the 9.50 a.m. (9.20 a.m. SO) Fort William - Mallaig and 6.10 p.m. back.

[British Railways



A model of the City station at Leeds as it will look after rebuilding, showing the former Midland section nearest the camera. Note the overhead luggageway, to be linked with all platforms by lifts.

THE NEW LEEDS CITY



Another view from south-west, showing the proposed car park on the extreme right and the overhead luggage and barrow ways on the left. Nearest the camera are the through platforms.
[British Railways

ference room; there is also the possibility of telephonic connection from the train with the national network, now provided on numerous Continental business services. On the score of relaxation, we would like to see more restaurant cars used on business services with a small cocktail bar on the pattern of that in the East Coast Route "Northumbrian". And, as the *Review* says, the car-hire service from B.R. terminals might well require better directed publicity to show businessmen the door-to-door possibilities of modern rail travel. As for reliability speed and service, the problems *vis-à-vis* other means of transport are far greater. Significant and concurrent improvements in the first two depend on modernisation of very much more than the passenger train itself — not only of all equipment involved in all train movement, but of the human operating approach as well; and that is not achieved at the drop of a hat. With that modernisation, when it is complete, should come the improved financial results that will enable the railways to pay for the kind of service and smart, well-cut uniforms to enhance it that greets the traveller at an airport; but so long as huge accumulated deficits are made to hang like a Damoclean sword over every Regional headquarters, detail improvements that promise savings have unfortunately rather more prospect of achievement than those that offer a chance of making money.

Scottish freight scheme extends

A YEAR ago the Scottish Region introduced an "Assured Arrival Service" for freight traffic, promising traders that their consignments would be available to their customers on the day following despatch. The first phase, inaugurated in April last year, gave an overnight service for freight traffic from Glasgow to Aberdeen and Dundee and in the reverse direction; three months later Inverness and Elgin were brought into the scheme, followed in September by similar facilities between Edinburgh and Dundee, Aberdeen, Inverness and Elgin. Up to June this year, more than a quarter of a million consignments had been carried successfully under the "Assured Arrival Service", which has now been extended across the Border to North-East England. Traders can hand over their

traffic each evening to the railway cartage service or direct to fifteen stations at Glasgow, and the same number in Edinburgh, confident that their goods will be delivered to their customers' doors next morning in Newcastle or Gateshead. In the North Eastern Region the scheme operates to and from Newcastle (Forth), Newcastle (New Bridge Street), Scotswood, Team Valley Trading Estate, Coxlodge (Rowntrees), Elswick Works, Felling, Gateshead and Heaton. The express freights providing the service in each direction are the: 8.48 p.m. Glasgow (High Street)-Newcastle (Forth); 9.10 p.m. Niddrie West-Heaton and Park Lane; 1.10 a.m. Joppa (Edinburgh)-Heaton and Park Lane; 9.40 p.m. Heaton-Portobello; 10.0 p.m. Heaton-Niddrie West; and 9.0 p.m. Heaton-Glasgow (High Street).

The new Leeds City

THE North Eastern Region has disclosed more detail of the £4½ million scheme to divert traffic from the Central station to a rebuilt and enlarged City station at Leeds, capable of handling comfortably the total of five million passengers a year who use both stations at present. The project will involve the entire reconstruction of City Station South, including the provision of a new south concourse connected to the existing concourse at City Station North, and the provision of modern booking, enquiry and reservations offices, waiting room, toilet and refreshment facilities. The present 16 platforms will be reduced to 13, but as we forecast some months ago, the new total includes two additional through platforms to be fashioned by linking two pairs of bays in City Station South. The scheme includes also the provision of an overhead car park and the enlargement and modernisation of the parcels depot, along with the provision of overhead barrow-ways to the platforms for the parcels traffic, thereby eliminating the movement of parcels and mail barrows from the passenger circulating areas. Modern colour-light signalling will be installed and a new central power-operated signalbox will control the new station and its approaches, incorporating the work of at least 20 existing cabins. Central station will be closed and its trains will be brought into the new City station via a flyover from a point near Holbeck High Level station direct to the west end of City station ; this fly-over will cross the former Midland lines to Bradford and Carlisle near Whitehall Road. The layout at the approach to City station from the west will be re-modelled, with new connections between the former Midland and L. & N.W. routes . It is hoped to complete the project in 1963-4.

S.R. rolling stock

FOLLOWING last month's note that the Commonwealth bogie had been chosen for extensive application to B.S. coaching stock built during the next two years — a news item confirmed shortly after we went to press by the B.T.C's. Annual Report — we were interested to note that S.R. "4-CEP" electric multiple-unit No. 7101 has re-appeared in service fitted throughout with Commonwealth bogies. This unit is regularly part of the 5.54 p.m. Victoria-Eastbourne and Littlehampton and a correspondent who has travelled in the set since its conversion reports that the riding is of a totally new standard for S.R. electric trains. On the topic of the latest S.R. multiple-units, correspondents have questioned Mr. R. C. Riley's analysis of the Kent Coast stock in his article last month. The Kent Coast series proper of the "4-CEP" units runs from Nos. 7111 to 7153, Nos. 7105-10 being a separate batch with different lot numbers that was built for the Central Section. Nos. 7105-53 are considerably altered by comparison with the "4-CEP" prototypes, Nos. 7101-4 (also on the Central Section), a few of the former's more important changes being double-glazed windows, "improved" bogies, completely redesigned interior fittings and modified traction equipment. Of the two-car "2-HAP" series, Nos. 6043-6104, for Kent Coast semi-fast and stopping services, only about 30 sets had been delivered when electric services were inaugurated on June 15 and the gap was filled by "4-EPB" units from Gillingham and elsewhere. A correspondent points out that only the "2-HAP" sets in the 5600 series and rebuilt from "2-NOL" units can be claimed as based on the "2-HAL" design, since the newly-built "2-HAP" have the B.R. standard interior layout, with all second-class accommodation in saloons. A final item of S.R. news is that two of the Bulleid Tavern Cars, Nos. S7892/6S, have been rebuilt as conventional RKBs with full-size windows in the buffet section.

North Staffordshire modernisation

WRITING in the *Staffordshire Evening Sentinel*, the Birmingham Divisional Traffic Manager of the L.M.R., Mr. George Dow, has released some interesting details of future plans in the Potteries and North Staffordshire area. He disclosed that a new diesel multiple-unit service is contemplated on the Stafford-Wellington branch line, and that plans are going forward for the modernisation of Stoke-on-Trent station with four platforms, each capable of accommodating trains of up to 16 coaches; the existing facade of the station will not be altered, but the work will entail the complete rebuilding of platforms 2, 3 and 4. A new and fully mechanised freight terminal will be erected north of Stoke-on-Trent station and work is scheduled to begin soon; the new depot will cater for traffic now handled at a number of local goods stations in the surrounding area,

"Princess Royal" class 4-6-2 No. 46212 "Duchess of Kent" restarts the down "Mid-Day Scot" from Rugby on July 24, 1958. [P. H. Groom

loading forwarded traffic direct to more than 100 separate destinations daily and receiving incoming traffic from 86 points. The present Longport and Longton goods stations will become concentration centres for certain full wagon load traffics for the Potteries area when the new Stoke terminal is in operation. In the Crewe area, plans are in hand to re-model part of the Basford Hall Down marshalling yard to accommodate a major diversion of northbound traffic, particularly from the North Stafford area. This will be achieved, first, by the working of traffic from north of Stoke-on-Trent via a new connection at Crewe North Stafford Sidings direct to Basford Hall, and second, by the diversion of traffic from Stoke-on-Trent and the districts south and east of Stoke via the Stoke-Market Drayton line, and from this route over a new connection to be laid in where the branch bridges the Stafford-Crewe line at Madeley.

More W.R. diesel services

THE W.R. summer timetables include further extensions of diesel multiple-unit services. From June 15, additional workings were introduced between Carmarthen, Swansea, Cardiff, Newport and Bristol; they include a new 7.15 a.m. (SX) from Cardiff to Bristol and a late evening departure at 10.20 p.m. from Bristol for Newport and Cardiff. Other services radiating from Bristol were also developed and new diesel m.u. workings introduced, notably to Swindon, Taunton and Weymouth. Talking of the summer timetables, a study of the W.R. working books shows some mile-a-minute runs, including two newspaper trains, that do not figure in the public tables and one, the 11.5 a.m. Paddington-Bristol, which is officially a fraction below the advertised 60 m.p.h. average. We are indebted to a correspondent for the accompanying table of W.R. trains scheduled at over 58 m.p.h. start to stop in the current summer service.

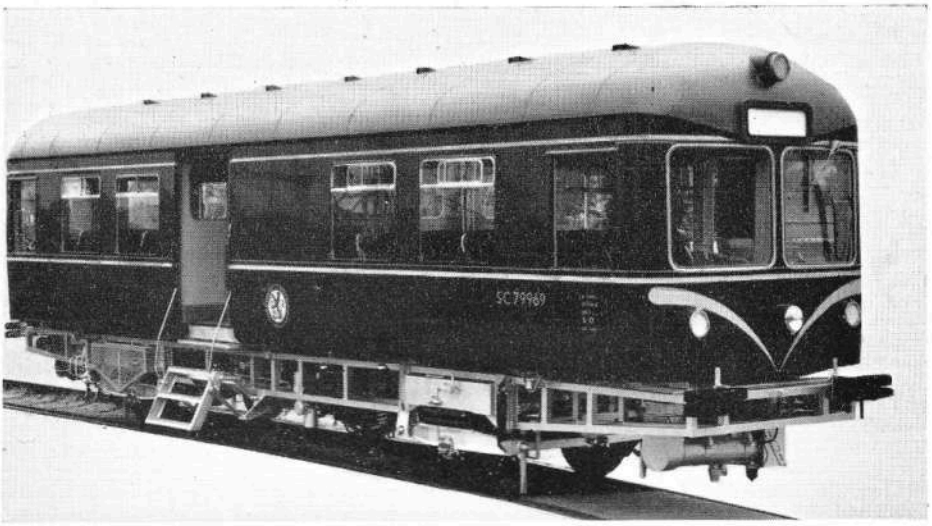
Diesels to Worcester

ONE of the many unfortunate effects of the present printing dispute may be the postponement or cancellation of improvements planned for next winter's B.R. timetables, if insufficient time is left when work is resumed to publish new public and working books by September 13; we know that on some Regions all staff have been

W.R. TRAINS BOOKED START TO STOP AT 58 M.P.H. AND OVER — SUMMER 1959

Train.		From	To.	Miles.	Min.	Speed.	Remarks
8.45 a.m.	SX	Paddington	Bristol	118.3	100	70.9	
4.30 p.m.	SX	Bristol	Paddington	117.6	100	70.6	
2.52 p.m.	SX	Swindon	Reading	41.3	36	68.8	1.50 p.m. Bristol
1.15 p.m.	{SO} {SX}	Paddington	Bath Spa	{106.9 {106.9	98½ 106	65.1 60.5	Advertised 99 min.
5.35 p.m.	{FSX} {FO}	Oxford	Paddington	{63.4 {63.4	60 62	63.4 61.4	2.15 p.m. Wolverhampton Newspapers
12.30 a.m.		Paddington	Taunton	142.7	138	62.0	4.35 p.m. Weston
6.41 p.m.	SX	Swindon	Reading	41.3	40†	61.9	11.30 a.m. Paddington
12.35 p.m.	SX	Newbury	Taunton	89.6	87	61.8	9.30 a.m. Paddington
11.15 a.m.	SX	Westbury	Taunton	47.1	46	61.4	
10.30 a.m.	SX	Paddington	Newton Abbot*	193.7	190	61.1	
10.55 a.m.	SX	Paddington	Newport	133.4	131	61.1	
4. 0 p.m.	SX	Birmingham	Leamington Spa	23.3	23	60.8	11.45 a.m. Aberystwyth
8.20 a.m.	SX	Bromsgrove	Cheltenham	31.3	31†	60.6	6.12 a.m. Derby
11.35 a.m.	FO	Cheltenham	Bromsgrove*	31.3	31	60.6	10.20 a.m. Bristol
11.41 a.m.	SX	,,	Bromsgrove*	31.3	31†	60.6	10.30 a.m. Bristol
1.51 p.m.	SX	,,	Bromsgrove*	31.3	31	60.6	9.15 a.m. Paignton
3.26 p.m.	SX	,,	Bromsgrove*	31.3	31	60.6	2.15 p.m. Bristol
12. 0 nn	SX	Paddington	Exeter	173.5	172	60.5	
7.25 p.m.	FO	Paddington	Taunton	142.7	142	60.3	
2.25 a.m.		Paddington	Swindon	77.3	77	60.2	Newspapers
1. 8 p.m.	SX	Swindon	Paddington	77.3	77	60.2	10.20 a.m. Taunton
5.11 p.m.		Westbury	Taunton	47.1	47†	60.1	3.30 p.m. Paddington
6.30 p.m.		Paddington	Chippenham	94.0	94	60.0	
7.15 p.m.	FSX	Paddington	Chippenham	94.0	94	60.0	
8.26 a.m.	{SX} {SO}	Chippenham	Paddington	{94.0 {94.0	94 96	60.0 58.7	7.0 a.m. Weston
9. 4 a.m.		Kemble	Paddington	91.0	91	60.0	8.0 a.m. Chollenham
11. 5 a.m.	SX	Paddington	Bath Spa	106.9	107	59.9	Advertised 60.0 m.p.h.
12.40 p.m.	SX	Exeter	Paddington	173.5	175	59.5	11.25 a.m. Kingswear
9.19 a.m.	SX	Bath Spa	Paddington	106.9	109†	59.0	8.20 a.m. Weston
3.21 p.m.	SX	Westbury	Taunton	47.1	48†	58.9	1.30 p.m. Paddington
10.47 a.m.	SX	Swindon	Chippenham	16.7	17	58.9	9.5 a.m. Paddington
9.36 p.m.	SX	Swindon	Chippenham	16.7	17	58.9	8.5 p.m. Paddington
8.46 p.m.	SO	Swindon	Chippenham	16.7	17	58.9	7.15 p.m. Paddington
11.45 a.m.		Bristol	Paddington	117.6	120	58.8	
3.30 p.m.		Paddington	Westbury	95.6	98	58.5	
9.45 a.m.	SX	Paddington	Reading	36.0	37	58.4	
9. 0 a.m.							7.30 a.m. Salop
12. 0 nn							8.55 a.m. Birkenhead
3. 0 p.m.							11.45 a.m. Birkenhead
5. 0 p.m.	SX	Birmingham	Leamington Spa	23.3	24	58.3	4.35 p.m. Wolverhampton
6. 0 p.m.							2.35 p.m. Birkenhead
8. 0 p.m.							4.30 p.m. Birkenhead
5.30 p.m.		Paddington	Taunton	142.7	147	58.2	

* Stop for banking assistance † Advertised time 1 min. ahead of working time



The latest Wickham diesel railbus for B.R., No. SC79969, is fitted with Andre-Westinghouse pneumatic suspension in place of standard semi-elliptic axlebox springs. The axlebox is located by the usual Wickham radius bar. This radius bar extends beyond the axlebox and the free end is connected to transverse radius arms, to relieve the suspension air bags from any side loading caused by side thrust between wheel flange and rail. Mounted on and connected to the rectangular air surge tanks built into the underframe are Westinghouse levelling valves, which control the air supply to the supporting air bags so that a constant floor level is maintained irrespective of the loading.

instructed to preserve their copies of existing schedules as a safeguard. Assuming that present plans can be fulfilled, one interesting development forecast for next winter is the introduction of a diesel multiple-unit interval service between Paddington, Worcester and Hereford. We hear also that a start is to be made with dieselisation of Paddington suburban services.

Type "3" diesel-hydraulics ordered

AS our June issue hinted was possible, the B.T.C. has placed an order for 45 Type "3" diesel-hydraulic main-line locomotives of 1,700 h.p. for use in the Western Region with Beyer Peacock (Hymek) Ltd. The new units will have Maybach diesel engines, Mekydro transmission and a B-B wheel arrangement, and will resemble the Swindon "Warships". Also, 12 more Type "3" diesel-electric locomotives of 1,550 h.p., for use on the Southern Region's London-Hastings line, have been ordered from the Birmingham Railway Carriage & Wagon Co. They will have Sulzer engines, Crompton Parkinson electrical equipment and a Bo-Bo wheel arrangement. Other contracts announced include: 32 power equipments from the Drewry Car Co. Ltd. for 200 h.p. diesel-mechanical shunting locomotives to be built at Swindon: and the B.U.T. power plant for the Liverpool-Hull "City-to-City" diesel multiple-units to be built at Swindon, as reported last month, covering 18 power equipments (230 h.p.) for twin-engined vehicles with driving position; 16 power equipments (230 h.p.) twin-engined non-driving vehicles; and 17 control equipments for trailer vehicles. An 88 h.p. diesel-mechanical shunter has been ordered from Ruston & Hornsby for the N.E.R.

FRENCH TAKE WORLD RECORD

AN important correction is necessary to last month's note on the downward trend of U.S. train speeds, as a closer study of the current S.N.C.F. summer timetable shows that the French have in fact taken from the U.S.A. the world record for the fastest regularly scheduled start to stop run. The new record-holder is Train 320, one of the four locomotive-hauled, five-coach high-speed services operating each way daily between Paris and Lille, and using new lightweight stock equipped with reclining seats and radio-telephone facilities between train and the French post office telephone network. Five of the eight trains complete the 155.9-mile journey between Paris and Lille in 2 hrs. 10 min., inclusive of stops at Arras and Douai, and the other three make an additional stop at Longueau; despite this additional halt, one of the three latter, the 11.40 a.m. from Lille, takes 2 hrs. 12 min. only for the whole journey—i.e., it averages 70.9 m.p.h. inclusive of three stops en route. Over the first section of 20.9 miles from Lille to Douai it is allowed 18 min., then for the 15.7 miles from Douai to Arras 15 min., in both cases start to stop. The record is achieved over the next section of 41.1 miles from Arras to Longueau, for which the timing is only 29 min. start to stop for an average speed of 84.9 m.p.h. From comment that has appeared in the French railway press, it seems that this very tight schedule has been planned partly in order to ascertain the limits of running in relation to the maximum speeds allowed, which in this case is 87.5 m.p.h. the 78.2 miles from Longueau to Paris in 67 min. at an average of 70 m.p.h. It will be recalled from last month's paragraph that the fastest start-to-stop speed featured in current American timetables is 81.8 m.p.h. over 39 miles by the Illinois Central's "City of New Orleans".

W.R. 4-6-0 No. 7918 "Rhose Wood Hall" enters Birmingham (Snow Hill) with an up express from Wolverhampton. [M. Mensing

The 11.17 a.m. Wellington - Much Wenlock branch train, headed by W.R. 2-6-2T No. 4120, climbs a wooded hillside between Buildwas and Farley on March 30, 1959. [M. Mensing

The Middlesbrough—Newcastle route of the N.E.R.

PART ONE

by K. HOOLE

MIDDLESBROUGH was the collective name of a few cottages on the south bank of the River Tees 130 years ago, with Stockton, its nearest neighbour, a few miles further inland on the opposite side of the river, in County Durham. The Stockton & Darlington Railway was opened on September 27, 1825, and over five years later (on December 27, 1830) a branch was completed to Middlesbrough, crossing the River Tees on an unsatisfactory suspension bridge, which was replaced only eleven years later.

Now Middlesbrough is a city of great importance, in the centre of one of the busiest industrial districts in the British Isles, and its rail services have had to expand to keep pace with the growth of industry. Two visible signs of this expansion are the new motive power depot at Thornaby and its frequent service of diesel multiple-units, northwards to Newcastle, eastwards to Saltburn and westwards to Darlington, with a less frequent service running down the coast as far south as Scarborough. The diesel service between Middlesbrough and Newcastle was one of the earliest in the country, commencing on November 21, 1955, with the early Derby pattern cars. The section between Hartburn Junction (Stockton) and Newcastle — a distance of 42¾ miles — is traversed also by steam trains to or from Bristol, Colchester, Kings Cross and Liverpool; in fact, one of these trains (the 4.15 p.m. Newcastle-Liverpool) runs at a normal diesel departure time of 15 min. past the hour, with a good connection at Stockton for Middlesbrough. Between Middlesbrough and Newcastle there are numerous signs of other industrial activity, for the line passes docks, collieries, saltworks, steelworks and shipyards.

The present route between Middlesbrough and Newcastle follows the course of a number of railways, the earliest of which was opened as long ago as 1830 and the latest as recently as 1905; moreover, at Bowesfield Junction it crosses the 1825 line of the Stockton & Darlington Railway itself. The present Middlesbrough station was opened on December 1, 1877, in place of an earlier station erected on this site in 1846: this, in turn, had replaced the original Stockton & Darlington station, situated on the goods lines which join the Middlesbrough-Thornaby line at Old Town Junction. In the current timetable there is a regular hourly service from Middlesbrough to Newcastle at 36 min. past the hour from 8.36 a.m. to 8.36 p.m., with additional through trains at 5.20 a.m., 7.20 a.m. and 9.46 p.m., all worked by diesel multiple-units, and it appears that this regular interval service was started as long ago as July 1, 1911. In those days the trains were worked by the Class "0" (L.N.E.R. Class "G5") 0-4-4 tanks now extinct; in more recent days they have been powered by Class "V1" and "V3" 2-6-2 tanks.

As a Newcastle train leaves Middlesbrough station in a westerly direction the passenger lines are on the south side and the goods lines on the north. The goods lines, incidentally, are used for passenger trains at times of pressure, usually to cope with the heavy flow of traffic from the coastal towns of Redcar and Saltburn on a summer Sunday or Bank Holiday evening. As already mentioned, we join the course of the original S. & D. line at Old Town signalbox, and shortly afterwards pass through the derelict station at Newport, closed in 1915, the platforms of which are spanned by the approach road to the imposing Newport vertical lift bridge, which can be seen to the north of the line.

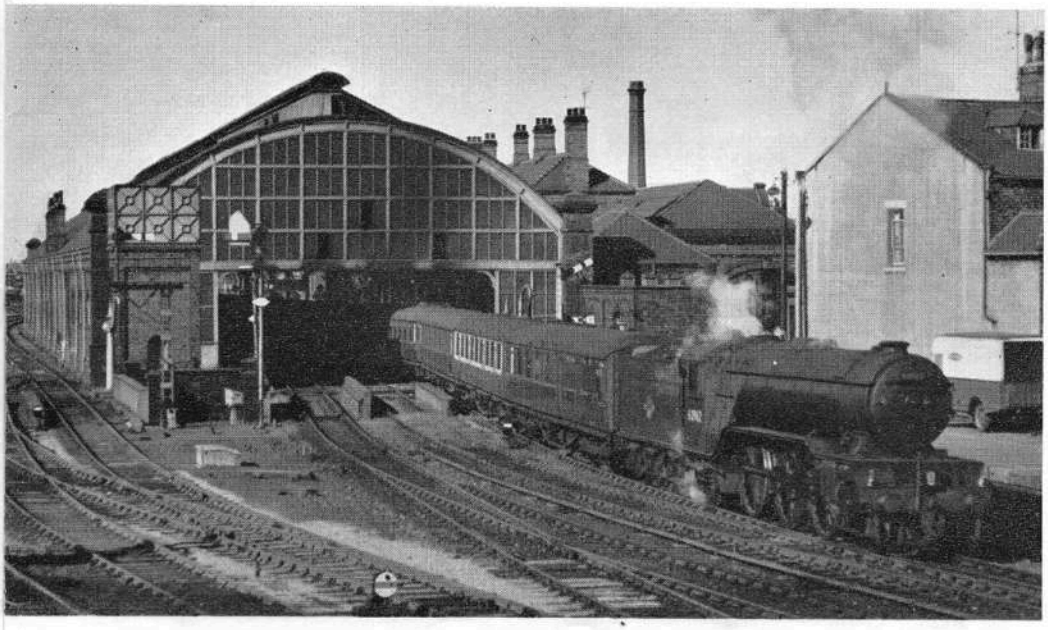
At Newport East signalbox the passenger lines curve round the southern extremity of the sprawling Newport marshalling yards and they have recently been realigned so as to pass to the south of the new Thornaby motive power depot. The old Newport shed, closed in May, 1958, can be seen in the centre of the yards, where a number of 350 h.p. diesel-electric shunters fitted with V.H.F. radio equipment for communication with the various cabins will be hard at work; these yards are to be modernised and enlarged. Beyond the yards is Thornaby, an island platform. The original station serving this town, now almost part of Stockton, but actually in Yorkshire, was called South Stockton.

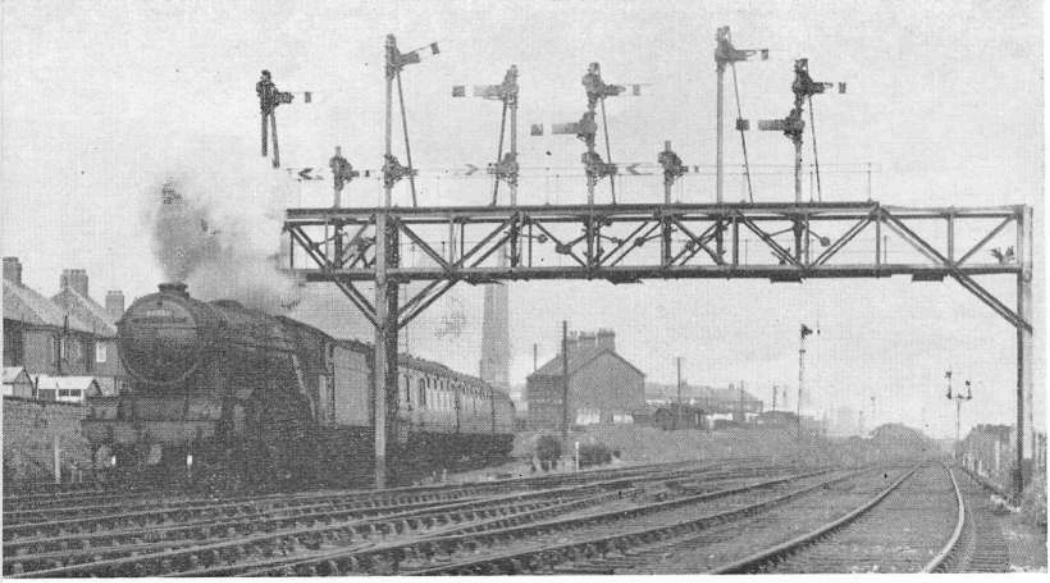
Shortly after Thornaby the railway crosses the River Tees from Yorkshire into County Durham, in which the Newcastle traveller remains except for the small section from the centre of the High Level Bridge into Newcastle Central Station, which is in Northumberland. It was over the River Tees that the Stockton & Darlington Railway built the suspension bridge which was such a disappointment, as the loads over it had to be severely restricted. According to W. W. Tomlinson the bridge was designed to carry a load of 150 tons but even with a train of less than half that amount the bridge was damaged. Naturally the railway company were very perturbed by the restrictions which the bridge imposed and soon had plans drawn up for a more substantial structure, which was opened in 1841, only eleven years after the original bridge was

Right: Class "J26" 0-6-0 No. 65773 trundles a transfer haul of empty flat wagons through Middlesbrough station on July 31, 1958.
[M. Mensing.

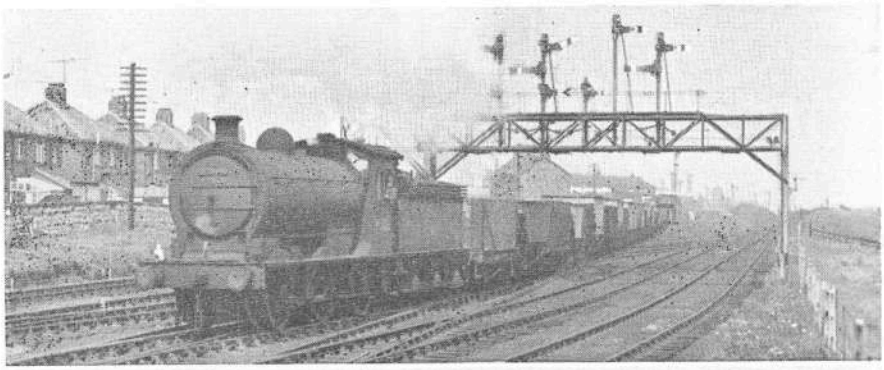
Right: Metro-Cammell diesel multiple-units forming the 1.28 p.m. to Scarborough prepare for departure from Middlesbrough on July 19, 1958.
[M. Mensing.

Below: Class "V2" 2-6-2 No. 60962 pulls out of Stockton with the 4.15 p.m. Newcastle - Liverpool on Whit-Monday, 1959.
[S. E. Teasdale.

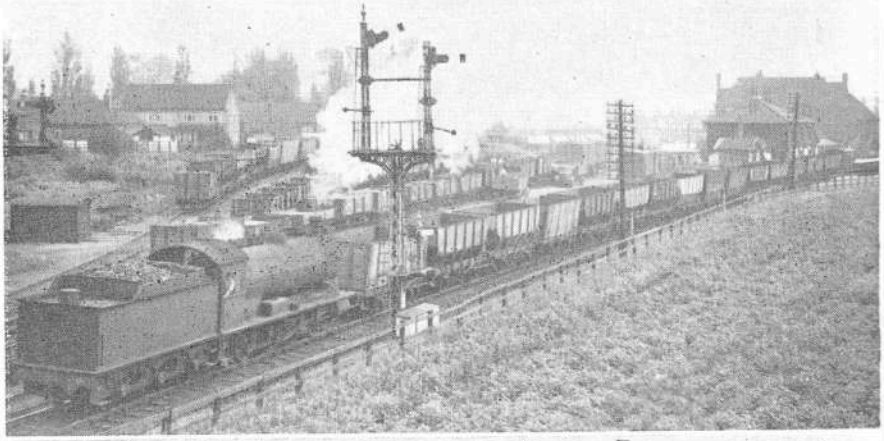




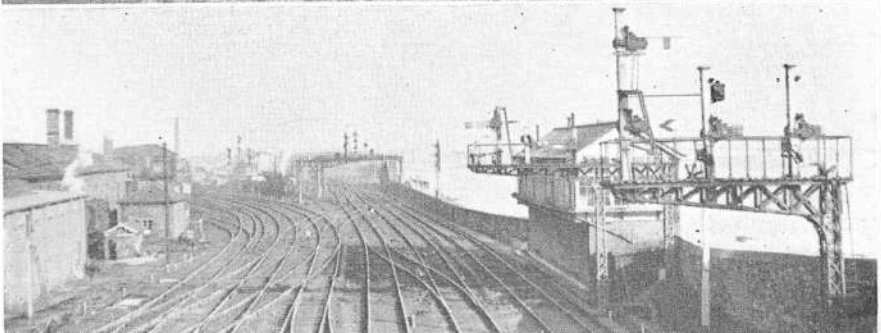
Above and right: Ryhope Grange Junction on May 11, 1959, with Class "V2" 2-6-2 No. 60886 on the main line at the head of the 12.35 p.m. Newcastle-Colchester (**above**) and Class "J27" 0-6-0 No. 65876 crossing from the South Docks line to make for Ryhope Colliery (**right**). The extreme right hand tracks are the ex-Londonderry Railway lines to Londonderry staithes.
[S. E. Teasdale



Right: Class "O6" 0-8-0 No. 63344 passes Billingham-on-Tees with an up haul of empties.
[H. Gordon Tidey



Right: Newburn Junction, West Hartlepool, with the goods lines to the dock area straight ahead; the lines to the passenger station bear to the left past the motive power depot.
[K. Hoole



brought into use. That this later bridge must have been of much better design and construction is emphasised by the fact that when the North Eastern Railway came to rebuild it in the early part of this century they were able to re-use the piers and foundations, and had to replace only the upper courses with new bed-stones and cornices. Incidentally our route is once again four-tracked, as we joined the goods lines from the western outlet of Newport Yards at Thornaby East signalbox.

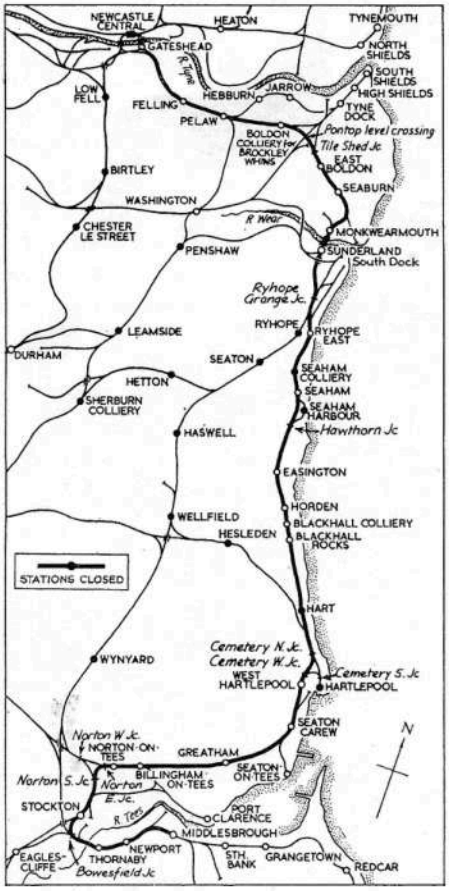
The river crossing is followed by Bowesfield Junction. The signalbox of that name is on the south side of the line and controls three through routes (one of which is open for freight only) and also connections to various works on both sides of the line. On the north side of the line, immediately before Bowesfield box, the freight branch from South Stockton Goods and Stockton Wharf trails in; it was on this branch that the first train from Darlington to Stockton terminated in 1825 and a cottage bearing a plaque to commemorate the event can be seen at the side of the main road between Stockton and Middlesbrough.

At Bowesfield Junction the route from Middlesbrough divides into three, the left-hand fork leading to Eaglescliffe (where it splits for Darlington and Northallerton), the centre tracks to Ferryhill and Shildon (the latter the one-time electrified line) and the right-hand fork to Hartburn Junction and on to Stockton. The first and last of these three routes form, with the line between Hartburn Junction and Eaglescliffe, an elongated triangle, which is bisected by the Ferryhill-Shildon route as it climbs over the Hartburn Junction-Eaglescliffe line. Although the Bowesfield Junction-Eaglescliffe and Hartburn Junction-Eaglescliffe lines run parallel for 1½ miles there is no connection between them until Eaglescliffe is reached.

As we are following the route from Middlesbrough to Newcastle we take the right-hand fork at Bowesfield Junction, round a sharp curve over which speed is restricted to 25 m.p.h., to Hartburn Junction, where we join the line from Eaglescliffe opened by the Leeds Northern Railway in 1852. The present Stockton station was built in 1893 and is one of the few remaining N.E.R. stations with an overall glass roof: the main up and down platforms each have a single bay at their north ends. Here, as at Middlesbrough and West Hartlepool, the goods lines pass outside the station. The station of 1893 replaced a previous station of 1876, known as North Stockton, which in turn had replaced the original Leeds Northern station of 1852.

Beyond Stockton station the original line was Leeds Northern property as far as North Shore Junction, which was then known as Leeds Northern or Clarence Junction; here it connected with the lines from Ferryhill and West Hartlepool, built respectively by the Clarence and the Stockton & Hartlepool Railways. Their stations were on what is now known as the North Shore branch, a goods line which is also the means of access to the locomotive shed. The depot now has a miscellaneous allocation of engines ranging from Class "B1" 4-6-0s to Class "J71" 0-6-0 tanks. North Shore box also controls the entrance to the freight line known as the Billingham Beck branch, which serves various factories on its way to join up with the much older line from Billingham to Port Clarence, the main line of the Clarence Railway.

The next signalbox — Stockton Bank — governs the entrance to and the exit from the yards at Stockton. There are only two tracks from this point to Norton South Junction, where we encounter another triangular junction, with the left fork leading to Ferryhill and Shildon and the right to West Hartlepool and Newcastle. The third side, between Norton East and Norton West signalboxes, was originally the Clarence Railway main line from Port Clarence to



Above : Class "V2" 2-6-2 No. 60886 moves the 12.35 p.m. Newcastle - Colchester out of Sunderland on May 12, 1959.

[S. E. Teasdale

Right : Class "A3" 4-6-2 No. 60084 "Trigo" crosses Monkwearmouth Bridge, Sunderland, with the Newcastle-Colchester train on October 11, 1957.

[S. E. Teasdale

Ferryhill. Between the South and East boxes there is a speed restriction of 30 m.p.h. because of the curvature of the line.

The line leading from the South junction past the West junction box and on via Wellfield, Haswell and Seaton Bank to Sunderland was for many years the secondary main line of the North Eastern and its importance did not decline until the route via Seaham was opened in 1905. It is three miles less to Sunderland via Wellfield than via Seaham, but the coast route's gradients are considerably easier.

At the approach to Billingham there is a goods independent on the down side which is terminated by a massive concrete stop block immediately beyond the points leading back to the down main line. This spot has been the scene of two serious accidents, in each of which the driver was under the mistaken idea that he was running on the main line, when in fact he was on the independent track. In the first accident, in 1939, a "B16" 4-6-0 finished up on its side on the station platform, whilst on the second occasion (on December 2, 1953) "WD" 2-8-0 No. 90048 collided with the buffer stops and the ensuing wreckage was run into by "V2" 2-6-2 No. 60891 on a down fitted freight. After Billingham station our route strikes away to the left from the former Clarence Railway, which carries a heavy freight traffic to Haverton Hill and Port Clarence. The passenger service between Haverton Hill and Port Clarence disappeared from the public timetables early in the 1939-45 war and advertised trains operated between Billingham and Haverton Hill until June 11, 1954, by which time there were only two per day from Billingham to Haverton Hill and one in the reverse direction. Although unadvertised, they still run for workmen, Mondays to Fridays. This is a sad contrast to the years before the 1914-18 war, when there were 13 or 14 trains in each direction.

The 7¾ miles of our route from Billingham to West Hartlepool were opened for passenger traffic on February 9, 1841, by the Stockton & Hartlepool Railway. This company provided its own passenger station in Stockton, close to that of the Clarence Railway, over whose lines it ran between Billingham and Norton East and between Norton South and Stockton. The route passes over low-lying land, the only item of note being the Cerebos salt works at Greatham, where one may catch a glimpse of the smart black diesel locomotive emblazoned with the firm's name writ large. Just over a mile beyond Greatham a short branch serving a shipyard trails in on the up side at Seaton Snook signalbox and ¾-mile further on is Seaton Carew station, serving a small holiday resort that is now almost a suburb of West Hartlepool. Here the two tracks become four as signs increase of industrial activity, the most noticeable being the extensive works of the South Durham Iron & Steel Company, where a number of steam and diesel shunting engines will be at work. The west side of the works is served by a branch which diverges at Cliff House South signalbox, runs round the rear of the works and rejoins the main line at Newburn box. In between these two boxes is Cliff House box. Both Cliff House South and Cliff House boxes are of the N.E.R. raised pattern, built on a gantry over the line — in this case over the goods tracks. This design of box will be encountered often on the remainder of the journey to Newcastle.

On the opposite or seaward side of the line to the steelworks there are extensive timber yards owned by British Railways and here one can usually see some of the small diesel-hydraulic and diesel-mechanical locomotives allocated to West Hartlepool shed. From Newburn box the goods lines continue straight on into the dock area whilst the main lines swing round to the left past the West Hartlepool motive power depot (51C). The depot is in two well separated parts, the southern one consisting of two roundhouses and the northern one a straight shed. Because of the condition of the local water there is an extensive water-softening installation at the side of the shed yard. Between the shed and the present station can be seen the Stockton & Hartlepool station, now used as a goods depot.

As the main line turns sharply to the left a line trails in on the right-hand side from the dock area, allowing trains from the north to run to the docks without reversing at Newburn: this junction is controlled by Church Street box. West Hartlepool station consists of a main up and down platform with a bay at each end of the down platform; the goods lines pass behind the station. Leaving the station going north the main line swings round to the right and follows a course adopted in 1877 to avoid the dock area; formerly the line ran on a more direct route through the docks. After about 1½ miles we reach Cemetery West box, where the line splits, the right fork leading to Cemetery South box and on to Hartlepool, the left fork to Cemetery North box, where a line comes in from Cemetery South to form yet another triangle.

From Cemetery North there are four tracks as far as the first station at Hart, but there is no connection between the two pairs after Cemetery North, so that trains to and from Sunderland via the coast route must use the eastern pair while those via the old route up Hesleden bank take the western pair. The latter route was closed to passenger traffic on June 9, 1952, and is now used only by freight trains: it can be used to join the old route from Stockton to Sunderland at Wellfield or to run via Trimdon to Ferryhill. Until about 1936/7 there were no

platforms at Hart on the coast line, and it was therefore served only by trains running via Hesleden bank; the station was closed in 1941 and re-opened again in 1946, only to be closed for good on August 31, 1953.

Beyond Hart the coast line crosses the first of the viaducts built across the ravines (or denes) which strike inland between West Hartlepool and Seaham. The viaducts were built no earlier than the first years of this century, when the North Eastern took over the Londonderry Railway and built a connecting line southwards towards Hartlepool—in fact, to Cemetery North Junction. This line, which was opened for passenger traffic on April 1, 1905, was intended also to open up some rich coalfields along the coast and now there are large collieries at Horden, Easington and Blackhall. At first there was only one intermediate station on the line at Horden, but Easington was opened in 1913, Blackhall Rocks in 1919 and Blackhall Colliery (a glorified halt) in 1936. Actually Blackhall Rocks was open on Wednesdays to Saturdays during the summer of 1912, but a full service did not commence until the timetable of October, 1919.

Some two miles before Seaham is Hawthorn Junction box, where a line serving Dawdon colliery and connecting with the metals of the Seaham Harbour & Dock Co. forks to the right; officially known as the Seabanks branch, it rejoins the main line at Dawdon signalbox, immediately south of Seaham station. Dawdon box also controls a busy level crossing, near which one will often see a number of chaldron wagons awaiting repairs at the N.C.B. Wagon Works; some of these wagons date back to the 1860's and are very similar to those used on the colliery railways of County Durham forty years earlier than that. Wagons of this type are extensively used in the area and the docks at Seaham Harbour receive large numbers of them with coal for shipment.

Immediately after the level crossing at Dawdon the old locomotive shed of the Londonderry Railway is noticeable on the right: it was closed about 1914 and is now in use as a warehouse. When the North Eastern took over the Londonderry Railway on October 6, 1900, there were 21 engines on the L.R. books and four were retained for use on the docks, which were not included in the transaction. Of the remaining 17 the N.E.R. quickly scrapped or sold four and the others were numbered in N.E.R. stock as 1113, 1335, 1712 and 2267-76; the latter consisted of one 0-4-4 tank, one 0-6-0 saddletank, three 2-4-0 tanks and eight 0-6-0s. Beyond the shed is the single-platform station, known as Seaham until 1925, and until then the newer N.E.R. station was called Seaham Colliery; in 1925 the ex-Londonderry station became Seaham Harbour and Seaham Colliery was renamed Seaham. The independent line was projected past the Londonderry station to serve some works.

A passenger service ran between Sunderland and the Londonderry station at Seaham well into the grouping period. The N.E.R. timetable for 1899 shows eleven trains in each direction daily on the Seaham & Sunderland Railway, but by 1906 this had dropped to eight in each direction and by 1922 to six. In the 1930's a determined attempt was made to retain the traffic on this line and in the summer of 1939 there were 15 trains in each direction to and from the Londonderry station; some of these services ran through from Newcastle or South Shields, including a number worked by Sentinel steam railcars, but the station was closed in the early days of World War II and has never re-opened. The single platform accommodated only five bogie coaches.

The next section of line to Ryhope Grange signalbox was opened by the Londonderry Railway in 1854 as a means of getting their coal to the River Wear for shipment. When the N.E.R. took over in 1900 they replaced three timber viaducts and strengthened the line generally, although it was some years before it was fully used as an alternative to the main line via the Team Valley or even to the line from Stockton via Wellfield to Sunderland. Hall Dene signalbox, controlling a level crossing on the road leading to Seaham Hall and also the rail access to Seaham Colliery, is ¾ mile beyond Seaham, and immediately to the north of it is the private station built in 1875 for the use of the Londonderry family when they lived at Seaham Hall, and before they moved to Wynyard Park. Seaham Hall is now used as a sanatorium. A 35 m.p.h. restriction commences just to the south of Hall Dene box and extends for one mile over the Hall Dene curves.

There are two stations at Ryhope — Ryhope East on the coast line and Ryhope (closed on January 5, 1953) on the line from Stockton via Wellfield. The two stations are separated by the Seaham Harbour-Sunderland road, but they share a common goods station where the two routes converge beyond the passenger stations. However, except for a shunt through the goods yard there is no connection between the routes and they run separately as far as Ryhope Grange box, exactly one mile beyond Ryhope East. Some 600 yards north of the two Ryhope stations is Ryhope signalbox, formerly called Ryhope Colliery Junction because it is the junction for a 2¼-mile branch serving Ryhope and Silksworth collieries. The junction is only with the Wellfield pair of tracks but the box also controls the Seaham lines. Originally the junction was on the Seaham lines and the branch to the collieries crossed the N.E. lines on the level.

(To be continued)

Memories of the Great Eastern "1500" class 4-6-0s

by "BALMORE"

IN 1913 A. P. Turner, the District Locomotive Carriage & Wagon Superintendent at Ipswich, sent for his top-ranking "Claud" 4-4-0 driver, Arthur Cage. "Well, Cage," he said, "you are my best man and you're going to take charge of the new six-coupled express engine when it comes to Ipswich. See you do as well with it as you have with 1809."

These few words heralded the arrival at Ipswich of the new and mighty "1500s", which were to be universally admired and respected by the enginemen and — ultimately, if not at first — by the mechanical staff; moreover, they were to be regarded as beautiful machines years afterwards by the people who now run and look after the survivors. The "1500s" on the G.E. Section have been manned by regular crews (and still are at some depots) for the greater proportion of their career; and when engines are treated thus they develop a personality in the eyes of the Running Shed staff who run and maintain them. In their later years, some of these engines found their way on to the G.N. Line, where they were neither appreciated nor thoroughly understood. I have no practical knowledge of their activities in Scotland and therefore cannot speak with any degree of authority, so that most of this article is devoted to incidents connected with the "1500s" on the G.E. Line.

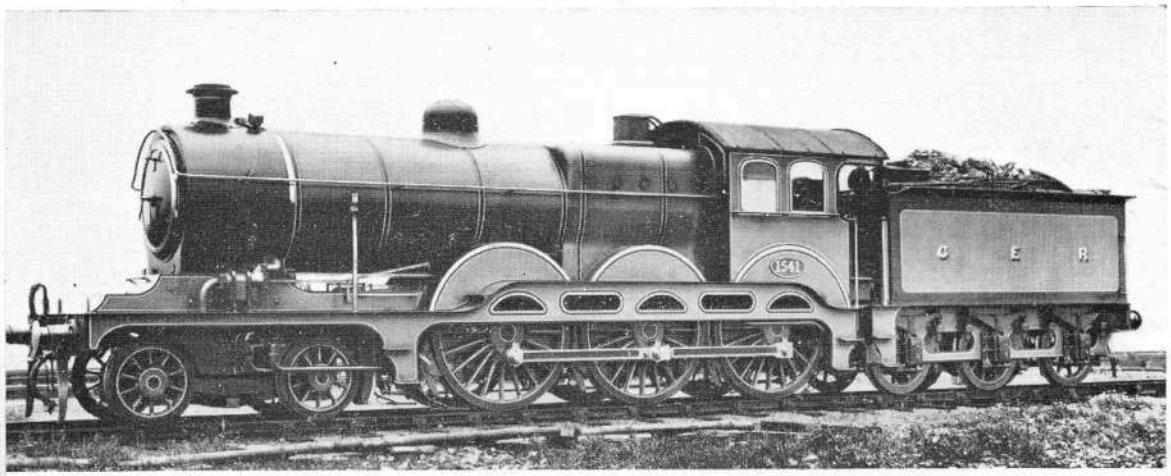
When Arthur Cage — well-known for his pointed beard and the block of wood on which he stood when in action, because he was small and wanted to see where he was going when standing up — was experimenting with his first "1500", the mechanical staff, some of whom are at Ipswich to this day and are the backbone of the place, were in doubts as to how the locomotive would react in everyday service. Their misgivings were soon realised.

Originally, the piston valve rings were of the Schmitt block pattern. Carbon deposit would form quickly, partial seizure would take place and the piston valve sleeves or liners and the rings would be ripped to pieces. This was also the cause of another frequent failure in the early days. The spectacle framings or motion plates showed a tendency to flaw near the point where the guide bar bolts held the guide bars to the spectacle framing, and it was thought that the seizures in the steam chest, due to the trouble with the Schmitt valve rings, threw a strain on the rocking shaft brackets, which were bolted to the spectacle framing. I think it was in 1917 that No. 1504 was fitted with the narrow valve rings as we know them today, and with the ultimate introduction of anti-carbonisers, all their troubles disappeared completely.

The original engines were built with the Schmidt superheaters and considerable difficulty was experienced with the superheater element ring joints. Between each element and the header was a serrated asbestos and copper washer. The copper tended to deteriorate quickly and burnt away, causing a steam blow in the smokebox with consequent loss of vacuum and shortage of steam when the engine was working heavily. Furthermore, the anti-vacuum valves on the top of the smokebox were connected to the superheater header by means of an extension piece jointed to the header and to the underside of the anti-vacuum valve. The bottom joint, i.e., the one on the top of the header, had a habit of blowing out and the job of remaking one of these joints was best left to the imagination. The joint was held by $5\frac{5}{8}$ in. studs and $2\frac{5}{8}$ in. set screws, the latter being at the back of the header. The only way to get at these was through the small aperture on the top of the smokebox made available by the breakage of the top joint and the removal of the snifting or anti-vacuum valve from its extension. The set screws would frequently turn off and the remains of the set screw or stud would then have to be drilled out by hand in an almost inaccessible position. By the time the chimney cowl had been taken down, the appropriate main steampipe removed, the studs and set screws inevitably drilled out, the joint refaced and remade and the whole re-assembled, six or seven days might well have slipped by.

Nevertheless, the engines soon became universally admired and their appearance was magnificent. The enginemen liked them immensely, for many and diverse reasons. The firebox front in the cab was simple and lent itself to cleanliness and tidiness, the engines steamed freely as a rule, and the compressed air from the Westinghouse donkey pump was used to good effect for reversing, lifting water and sanding. Moreover, the engines could be "driven", as very fine adjustment to valve travel was possible by the use of the fine thread reversing screw.

It is well known that specially long shovels were provided for the fireman's use on the original "1500s"; it was necessary also to move the left foot when firing, but this was little or no hardship. The firegrate did not slope over much, so that each shovelful had to be placed and plenty had to go to the front. The objectionable modern habit of closing the front damper was not allowed in those days, and with the aid of



As built — G.E.R. "1500" class 4-6-0 No. 1541 [Locomotive Publishing Co.

both dampers a bright even fire was maintained quite easily. A level grate has one advantage, in that a fireman who uses his head knows exactly how his fire is behaving; a sloping grate can always "take control" when the engine is being worked heavily, but this is virtually unknown with a level grate. The steaming of the "1500s" was free and they presented no difficulty to the firemen. When the coal in the tender was getting low, the front plate of the G.E. tender could be lifted out and a fireman could take a walk inside at his convenience, without any mountaineering, to pull coal forward with his pick.

The L.N.E.R. days were perhaps the time of the "1500s'" greatness and between the wars the G.E. drivers, particularly at Ipswich and Parkeston, made themselves and their engines famous. They identified themselves with their charges, which were as much personalities as they were themselves. Cecil J. Allen has written on many occasions of "Rocky" Chapman, whose son is a driver at Parkeston today. Not long ago one of Chapman's old firemen retired and on his last day of service said of his old driver: "Mr. Chapman was a masterpiece. He would never allow talking on the road, but when we got to the end of the journey, we would discuss the trip, any mistakes made, and what we could do to manage better still next time". Some of the greatest Ipswich drivers did their main line work on the "1500s" — such men as George Pinkney, Jack Packe, Dick Bannock and Bob Coleman. They were craftsmen in the true sense of the word and worshipped their engines; their firemen not only had to do likewise, but they were enjoined not to waste one ounce of coal, and to avoid all blowing off and smoke. Later these firemen developed into enginemen as good in every way as their predecessors.

In 1927, before the Ipswich-Manchester lodging job became a reality, No. 8561 worked through from Ipswich to Liverpool with 13 heavily loaded G.E. bogies conveying 340 Canadian Pacific emigrants and their baggage. The driver, J. Packe, had not then learned the road to Manchester, so he took a pilotman from Lincoln but kept control of the regulator throughout. The fireman, Frank Cocksedge, who in later years tended with loving care No. 61569 and Class "B1" No. 61059, set down a few notes on the performance of the engine. He had, of course, never been beyond Lincoln himself and so the road was strange. This is what he recorded:

"Belpaire firebox, no drop grate, 180 lb. per sq. inch boiler pressure. Engine went through on one fire, pricker only being used at Lincoln over the firebars. Big ends filled up there also. Engine completed trip quietly with no blowing off, but time was kept correctly. Engine took 13 bogies up from Sheffield to Dunford unassisted. I must say here she was beginning to feel the effects of miles covered and I had to ease the injector a time or two to give the driver the maximum boiler pressure on the bank. At no time was I in any difficulty, but strict attention was paid to the amount in the firebox at any one time. With a bright minimum fire, one could make a stop with the engine perfectly quiet or continue with a speedy application of a dozen or so shovelsful of coal.

My opinion of 8561 and the Driver — superb!"

I have never seen mention of this trip in print at any time, but it is very typical of the pride and precise working of the Ipswich men of those days, to whom the "1500s" were the centre of life itself. A year later

came the regular Manchester jobs, worked by Pinkney and Packe, and later on by Cross and Arthur Kemp.

By then there were some fine performances on the Norwich, Cromer, Yarmouth and London services. In the late 1920s, some of the then un-rebuilt "1500s" were fitted with the Lentz poppet valve gear. Quite a few Lentz engines, including the Beyer Peacock engine No. 8577, built with Lentz gear, were stationed at Ipswich. It always seems a pity that this particular type of gear was not pursued. I have never had personal contact with it, but I know there was difficulty in satisfactorily setting the valves at some of the running sheds. Nevertheless, the Lentz engines showed a marked economy and ran with a lovely rhythm; when worked heavily, they did not set up any pounding in their axleboxes, nor did they pull the boiler water down against the exhaust injector in the same way as a piston valve engine would do. No. 8577 was said by some of the men that used her to be the fastest "1500" on the road. Certainly, she is still talked about and I believe I am right in saying that the Ipswich fitter who was the Lentz specialist in those days was for some reason particularly interested in this locomotive.

Many coal trials between the Lentz and the original engines were held from time to time and in the hands of the Ipswich men 27-29 lb. per mile was quite a normal figure. Driver English, known throughout Ipswich and responsible for much fine running with the original locomotives, is reputed to have got down to 25 lb. per mile with Lentz valve engines on express trains in the early 1930s. This seems incredible, but knowing his methods it is possible. English, sometime Mayor of Ipswich, was a very fiery little man who brooked no interference from anybody and little advice on how to run locomotives economically. He was a "first port" man and therefore directly and immediately at war with anybody in authority who wanted the regulator wide open. His fireman for a long while was Alf Alderton, by hobby an all-in wrestler and consequently a man of strength who had from time to time to be sharply curbed by the old gentleman over his expenditure of coal. Alderton ran No. 61564 with tremendous success during my time at Ipswich.

Now we have only the surviving Gresley rebuilds of Class "B12/3". Perhaps some of the glamour has been left behind but the engine is still essentially Great Eastern. The first time I rode on a "B12" was on No. 8522 from Liverpool Street to Cambridge in 1942 with a Westinghouse-fitted train of suburban stock. She was in the hands of the regular crew and the inside of the cab was very clean. Ultimately there came the period when I was at Ipswich and had intimate experience of the eight engines stationed there at the time. Mechanically, I am convinced the rebuild was the better engine and for the engineman it was every bit as good — comfortable, clean, economical and fast. It was always found advisable to attend to the valves at 15,000-18,000 miles to avoid any blowing through and it was absolutely essential to take the big ends down at 10,000 miles to deal with any knock or wear that might be developing. One had to watch constantly, too, for knock or wear at the small ends, but apart from that, and frequent scrutiny of oil pipe lines to the coupled axleboxes, the maintenance required was very straightforward.

Up to and even during the war the "B12" rebuilds were doing work on the G.E. main lines that was of the very finest order. Right through the war, the Stratford men kept their "regular" engines and managed to ensure that there was a reasonable standard of maintenance. To this day, in fact, the No. 11 link at Stratford is known as the "1500 gang", although it must be 10 years since any of these engines was rostered to its crews. In the 1930s most Stratford firemen had as much as eight years on the same engine, possibly with the same driver the whole time.

Cecil J. Allen has immortalised Fred Mattin's run with No. 8535 on the 1.30 p.m. Liverpool Street to Norwich, when 90 m.p.h. was touched before Diss. Fred Mattin told me all about this run before he retired in 1951. He had been put on his mettle earlier in the day, before he left Ipswich on the up journey, by some remark uncomplimentary to the engine and as a result he went like the wind. There is no doubt that 90 m.p.h. could be achieved very easily with a rebuild and it must have been done many times.

Another extremely heavy turn worked by the rebuilt locomotives, I believe prior to, but certainly after the war, was the down "Mail" to Ipswich, leaving London soon after 9 p.m. and calling at Stratford, Ilford, Romford, Brentwood and then all stations. The load was never less than 350 tons and with this Brentwood, Hatfield Peverel and Bentley were difficult places from which to restart. I have ridden with the Ipswich men on this train and learned how time could be saved. I can still see Frank Cocksedge fully applying his vacuum brake on No. 1569 as he approached Hatfield Peverel, putting the handle in the running position halfway down the platform and stopping against the platform slope. That was art in driving, particularly when one remembers it was dark, the locomotive was a "right-hander" and the up platform at Hatfield is staggered from the down. Most of the men could do this — and better with the Westinghouse trains before the war, when brakes on both train and engine were beautifully adjusted.

During the war the "1500s" worked

ambulance trains, mainly in the West of England. The enginemen were all volunteers from the G.E. Section, whose knowledge of the locomotives and particularly of their Westinghouse brake was invaluable. The men worked 12-hour shifts and they and their engines were based on such places as Newbury, Westbury and Templecombe; they had to be ready to work at a moment's notice.

The ambulance trains were all Westinghouse-fitted and not an easy proposition, either in weight or to stop steadily. I believe that most of the trains were manned by American servicemen — certainly most of the officers were American — and in most cases a close bond developed between the enginemen, the locomotive fitter who travelled with the train and the Army personnel, although it became tenuous when there was any rough braking. This used to happen rather frequently on the G.W.R. because, much to the disgust of the G.E. men, that system deemed it necessary to provide an assistant engine on some of the banks and the helper, being a G.W. engine, was vacuum brake-fitted and worked at 25 in. of vacuum. All went well if the G.W. man could be prevailed upon to leave his brake alone; but as the G.W. engine was always attached in front, its driver should by rights be in charge of the brake and he could only be prevailed upon to forget his duty if he were made sufficiently nervous of a Westinghouse engine and train behind him. Any rash passes with the vacuum handle on the leading engine resulted through the medium of the proportional valve in something like the upending of the "B12" and its train, as the sharp-acting Westinghouse brakes took effect. The reactions of the ambulance staff when this occurred are best left to the imagination.

Otherwise, the "B12s" were admired and respected wherever they went in the West Country; their performance on the banks was first rate and many a G.W. man has spared a word of praise for them.

In 1951, the Chief Officer (Design) of the Railway Executive decided to take a ride on the then brand new Pacific *Britannia* from Liverpool Street to Ipswich at the head of the down "Norfolkman", returning with the 1.55 p.m. from Ipswich to Liverpool Street, a 10-bogie train. He was accompanied by Inspector Theobald and was to be met on arrival at Liverpool Street by the Motive Power Superintendent, L. P. Parker, himself very much an old G.E. man. We were required to turn out a "1500" for the up train and it so happened that the rostered engine for the train was No. 61535, with Driver Jim Calver. This engine was a beauty and, like most of her breed, rode beautifully. She was always kept clean, with polished brass beading to the splashers and polished buffers, but the interior of the cab was the show-piece, for about a year previously we had painted the roof cream, and it was cleaned and tallowed daily. All the brasses were perfection; the regulator handle was polished steel and you could eat your lunch off the footboard.

This was indeed the "1500" on which the Officer for Design was to ride. One essential point was not missed in our plans — essential perhaps more to a "1500" than to most classes of engine; the perfection of No. 61535's riding rested on the setting and adjustment of the axlebox wedges. I remember saying to Jack Percy: "Let's have a real G.E. job made of those wedges — do them yourself". And so he did. The engine ran up to London with a beautiful, smooth, noiseless rhythm. When she left Ipswich at 1.55 p.m. she shone like a jewel and there was not a wisp of steam from any packing, joint, or gland on that engine.

The other driver on No. 61535 at that time was Charlie Parr. When he was on the 10.30 p.m. Mail from Liverpool Street (12 corridors) on a Sunday evening, he would come down just before lunch-time to make sure his engine was booked to him on the up train leaving Ipswich about 5.25 p.m. He wouldn't be able to enjoy his lunch until he was sure that "35" was on her proper job and it was as much as our lives were worth if he was robbed of his engine for any reason. Living just outside the Gate, he kept a close watch on activities when off duty and we would soon hear: "Where's my engine?" if he seemed likely to lose her.

One bitterly cold winter's night, on January 27, 1952, No. 61535 was on the Mail again. This was after Jim Calver's place had been taken by Bob Riches, who well remembers the trip. We had a load of about 400 tons and it was soon obvious that all was not well; in fact, we had defective elements and then only 130 lb. of steam at Chadwell Heath. Bob maintained the very reasonable belief that the harder you climb a hill, the sooner you get to the top, and, as always, put it into practice. By Romford I had to get down to work myself. Between us we got No. 61535 and train to Ipswich, with one stop at Colchester, inside the sharp booked timing, with never more than a third of a glass of water and 150 lb. of steam. I was soaked to the skin and pretty well used up by the time we got to Ipswich, but the job had been done; the right-hand injector was frozen, the water handle could not be moved, to cap it all my car at Ipswich was frozen to the road and shifted only after a struggle, and although my shirt was far from frozen it too would only move after a struggle when I got home. No. 61535 had done what many of the class have when things are going wrong — she got through her work with a low steam pressure and kept time; you cannot always do the same with the smaller-cylindered, high pressure engines that do such fine work over the G.E. roads nowadays.

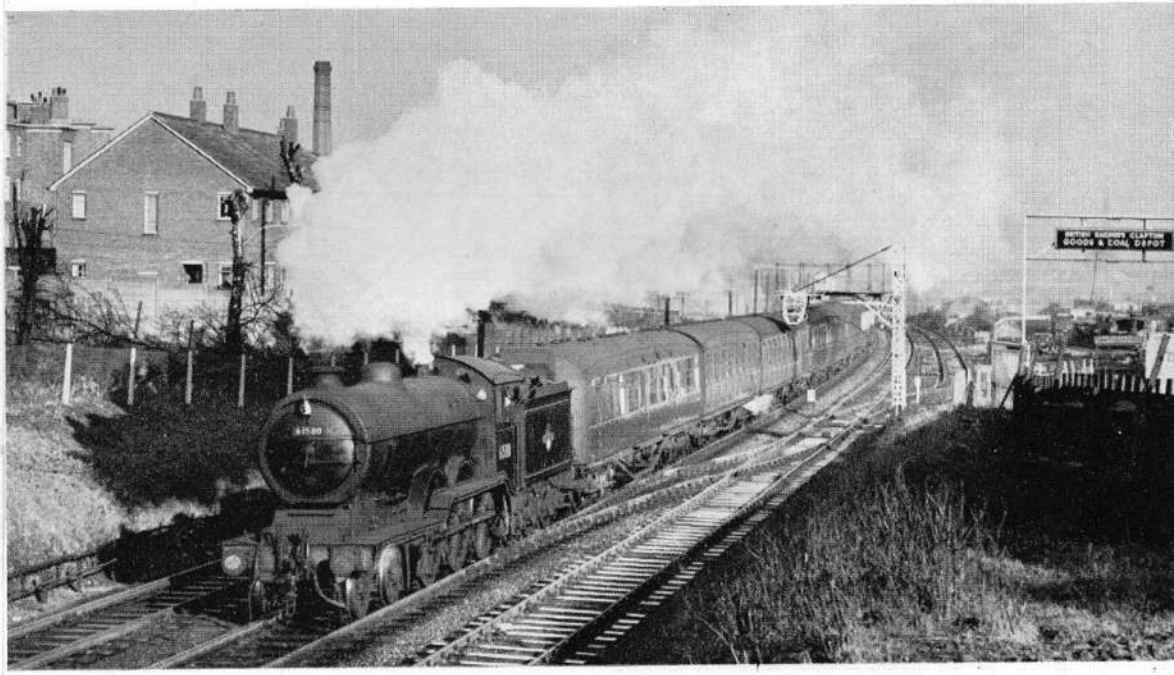
I mentioned previously that the cab hood of No. 61535 had been painted cream. Of course, it is rather unusual these days and it came about one evening when, before going home, I was talking to one of the running foremen in Ipswich shed. He was telling me how, when he fired for George Pinkney many years ago, the inside of the cab of their "1500" had been painted cream. He said that nothing like that would ever be considered nowadays; but I thought otherwise. A week or two later I found myself on No. 61535. Driver Calver was working the train and, of course, the "1500" was in perfect condition. "How would you like this cab done out in cream?" I asked him. Calver was delighted with the idea and the next day the engine was stopped and the work carried out by the painter. The cream paint was varnished and maintained in perfect condition for over two years. Soon after that other enginemen asked for their cabs to be decorated and we readily agreed, because it created a keenness and pride in the job that was a joy.

The last days of the "1500s" in the Stratford District were spent at Southend before electrification. They took their turn on most of the London trains but there is no doubt that the packed 10-coach trains took it out of them, particularly when starting. Piston packings were continually being renewed, wear on large and small ends was heavy but, nevertheless, the locomotives were still liked and today's Southend motormen who manned No. 61575 are delighted that their "1500", which they reckoned was the best engine at Southend, is still running as fast and as freely as ever.

The few surviving "1500s" cannot last long. There is no doubt at all that one of these engines in first-class order and in first-class hands could still keep time on all but the very hardest "Britannia" duties. Before they go finally, I should dearly love to see one deputise in emergency for a "Britannia" and be present on it. I know what could be done.

I will close with one fairly recent experience. On the Saturday prior to the change-over to electrified working on the Southend branch on the Sunday evening, I came up on "B12" No. 61576 with the last evening train. We had a load of eight bogies and only a few passengers, but we satisfied at least one by leaving Wickford and stopping at Billericay in 7 minutes, reaching 50 m.p.h. on the 1 in 100 gradient. This was "electric" running indeed, but the old engine, with about 45-50 per cent cut off, kept her water up in the glass and her steam right on the mark, and as David L. Smith once

(Concluded on page 376)



Class "B12/3" 4-6-0 No. 61580, shortly before its recent withdrawal, passes Clapton sidings with the 9.12 a.m. Ely-Liverpool Street on January 24, 1959. Only nine of the class survived at the end of June. **[K. L. Cook**

The Shrub Hill road crossing of Worcester's "Vinegar Works line", with the signal cleared for road traff.c (**left**) and at danger to allow W.R. 0-6-0PT No. 1629 to cross on May 27, 1958 (**right**) with the daily trip.

[M. Mensing, P. J. Shoesmith

A Worcester Industrial Line

by T. A. C. RADWAY

THE Lowesmoor Tramway, or as it is more commonly known, "The Vinegar Works Line", links the vinegar and cider works of Hill Evans and Co. with the main line of the Western Region near the motive power depot adjoining Shrub Hill station, Worcester. This private railway is approximately 900 yds. long and serves 200 yds of sidings.

The business of Hill Evans and Co. was established in 1830 and in 1869 it was decided that a rail link with the main line would be advantageous. An application for a private Act of Parliament to permit construction of the line was made in November, 1869, and approved in The Worcester Railway & Tramway Bill (1870). This laid down that speeds were not to exceed 4 m.p.h. over road crossings and that signals were to be erected to the approval of Worcester City Council; it also required that a competent person should attend the gates when they were in use. The railway has always been used by freight traffic only.

Mr. Grierson, then General Manager of the Great Western Railway, suggested that self-acting gates, connected with the signals, should be closed across the streets when trains were about to cross them. However, Hill Evans and Co. objected to this proposal in January, 1872, and preferred gates at street intersections that barred access to crossings from the railway, and this was the scheme adopted. Mr. Grierson's idea may have been more sensible, for during the last 20 years there have been three collisions at the crossing between trains and respectively a steam-roller, a van and a car.

The line was opened to traffic in the summer of 1872, with the G.W.R. permanent way men maintaining the track and signalling. For many years past it has been worked by a G.W. "1900" class 0-6-0 pannier tank, Nos. 1919/36/39 being regular engines, but a "1600" class pannier tank is now employed on this restricted line. It is operated with a tablet in the form of a wooden handle with keys to the gates attached to it. Two shunters and two brakevans run with the train, which nowadays sets out at 3.50 p.m. each arternoon and on Monday mornings, the average number of wagons in each trip being four; the maximum number of wagons permitted is 12 in each direction, for there are gradients of 1 in 29 for 350 yards and 1 in 40 for 150 yards. Each trip takes in the region of 45 minutes, out and home.

There are many interesting features on this line including two sets of signals that control traffic on the streets as well as the train; these signals are operated by flagmen from Shrub Hill station. There is also a swing bridge over a small road.

NEWS IN BRIEF

. .The Eastern Region is seeking authority to close the 8¼ m.les of line from Clarborough Junction, between Retford and Gainsborough, to Sykes Junct.on, between Gainsborough and Lincoln, largely on account of the condition of the viaduct over the River Trent, on wh.ch single-line working has been in force for some time to permit temporary repairs; if this section is closed, through traffic between Retford and Lincoln will be faced with a 5½-mile detour via Gainsborough . . . Eastleigh Works, S.R. is holding its open day this year on August 5 from 1.30-4.30 p.m. . . . Construction of another of the L.M.R's. new goods depots for sundries traffic has begun at Warrington (Bank Quay); of the 15 similar depots proposed in the L.M.R. freight plan, work is in progress at Manchester (Oldham Road), Chester, Oldham (Clegg Street) and Liverpool (Wavertree), in each case according to schedule, so that all four should be in operation by the end of this year . . . Four new halts have been opened between Elgin and Aviemore, Scottish Region, for service by the thrice-daily railbus workings each way on this line . . . The first of the blue-liveried Glasgow suburban 25kV. a.c. three-car multiple-units built by Pressed Steel, arrived in the Manchester area at the end of June for testing on the Styal line; numbers of the cars, writes Mr. P. W. Skillern, are SC61481 (motor coach), SC75601 and SC75566.

Locomotive Running Past and Present

No. 113

by CECIL J. ALLEN
M.Inst.T., A.I.Loco.E.

THERE are few things to equal the product of a really lively imagination. And when the columnist of one of our more sensational newspapers directs that imagination towards a happening on a locomotive footplate, the result can be startling indeed, as may be seen in the quotation which follows. "The place is a stretch of nowhere, midway between Newcastle and Edinburgh ..... Only two men are here — and 'here' is the footplate of a night express train tearing hell-for-leather towards Scotland. There is no audience, but there are a dozen carriages hitched on, each filled with sleeping passengers. Two-thirds of an uneventful run has been completed. The driver is relaxed and confident in his cab. His name is Norman McKillop. Everything is O.K.

"Norman McKillop consults his big turnip watch. Right on schedule. He glances at the steam pressure gauge. *Twenty-five pounds to the square inch.* Just right. Things couldn't be better." The italics are mine. I have always known my good friend Norman to be a wizard with the regulator, but to be "tearing hell-for-leather" with a twelve-coach train on 25 lb. per sq. in. of steam is a degree of wizardry that surpasses the imagination of every one of us. "He and his fireman exchange a wink of well-being", this dramatic story goes on. "And that wink is pretty well the last wink that either of them is to wink.

"For, with a roar like a thunderclap, a solid wall of flame shoots out of the firebox and fans back halfway over the long tender, behind. There is no time for thought. Neither do these highly trained experts need to think. Simultaneously, they leap for the corner of the boiler end, and, in less time than their wink took, they have whanged the blower on, jammed shut the throttle, and brought the second injector into action. Disaster has been averted. The searing flames are bottled up." Well, well! To make all these complicated movements at the corner of the boiler end in less time than it takes to wink seems to call for even more concentrated wizardry.

"But, with the throttle shut, Norman McKillop's train can't go. If he opens it, he will again expose himself, his fireman and his passengers to grave danger. He cannot do that. But equally he cannot strand an express train in the middle of the night and miles from its destination. He must get through to the next station. But how? Quite simple really. Brave and dramatic and all that, but nevertheless simple. He directs his engineer to stoke up the fire and get clear of the cab. Then, leaning his whole body out of the window, he opens the death-dealing throttle to get the necessary speed up." This quite amazing feat of gymnastics appears to excel all the wizardry of which we have read until now. How any man with "his whole body" outside the cab window can both keep his balance and extend his arm sufficiently far back through the window to reach the regulator handle defies explanation. But it is "quite simple really" — when you know how!

"The flames burst forth and lick about his legs — the only bit of him still inside the cab. He bears the monstrous heat as long as he can, then shuts down the throttle again and lets momentum take over. Repeating this action again and again, he inches his train over a steep grade, then coasts down into Tweedmouth, where the faulty engine is replaced. His boots are charred and his hands blistered — but when he pulls into Edinburgh that morning his train is only a few minutes behind schedule." There must have been yet more wizardry on my friend Norman's part to pick up, between Berwick and Edinburgh, almost all the time lost by the slow running before Tweedmouth, the finding of a suitable spare engine and getting the engines changed.

But let that pass. What caused the renowned *Spearmint* — if it was *Spearmint* — to behave in this unruly fashion? I can hardly imagine that the fusible plug in the firebox had melted, for it is unlikely in the extreme that so experienced a crew would allow the crown of the firebox to get uncovered by water. No doubt it was a blow back, and if it was of the explosive kind, it would give the crew some highly unpleasant moments. Such a happening results from a momentary cessation of combustion on the firegrate, caused by closing the regulator without first putting on the blower at sufficient strength; in these conditions the gases resulting from combustion, forming an explosive mixture, can ignite suddenly and force a considerable rush of flame through the firedoor into the cab.

Passing under low tunnels or even bridges can momentarily arrest the normal direction of the stream of air and gas, and have the same effect, and this is more difficult to guard against. A contributory cause also is over-firing, which produces a black fire, giving off unignited gas. Whatever the cause, the correct drill almost certainly would be to open the regulator, in order to create a

maximum of draught, rather than to close it, as the newspaper so brilliantly suggests; and whatever bearing on the matter the putting on of the second injector would have there is not a clue. However, I have little doubt that Norman McKillop dealt with this dangerous happening with complete competence; but hardly in the way that this ludicrous story would have us believe! I am indebted to Mr. F. G. Cockman for sending me the cutting.

Some time ago I received a letter from Mr. Ivor H. Smart concerning the relation between the cut-off and regulator opening needed for maximum efficiency of locomotive performance. He first quoted the following from the *Locomotive Engineer's Pocket Book*. "To secure the maximum economy in fuel and water, drive the engine always with a full regulator and notched up to suit the load, gradient and required speed. Wiredrawing occurs with a restricted regulator opening and late cut-off; this means that full advantage is not being taken of the pressure available in the boiler. The writer appreciates that there are piston-valve engines, usually of a rather old design, which cannot be notched up very far, and also that when an engine is steaming badly, a 'pasting' is the only effective but drastic cure for the time being ; these are the only exceptions to what should be a golden rule. When the exhaust beats are no longer distinct and merge into a continuous roar, it is an indication that the engine is being worked with an excessively late cut-off."

My correspondent goes on to quote from *The Steam Locomotive in Traffic*, by E.A. Phillipson, who declares that "many actual experiments have definitely proved that early cut-off working is ultimately the more economical", and that most engines are now designed with such proportions of valves and ports as will enable them to be worked efficiently with an early cut-off. This author goes on to cite experiments made some years ago by the Pennsylvania Railroad on their Altoona test plant (I believe with a "K4s" type Pacific), in which, with the engine under test developing 1,500 h.p., at 40 per cent cut-off the coal consumption was 2.52 lb. per i.h.p.-hr., with 30 per cent 2.25 lb., and with 20 per cent 2.02 lb., the corresponding steam rates per i.h.p.-hr. being 18.9, 17.5 and 15.8 lb. respectively.

Some months ago I wrote in another journal that evidence seemed to show that a common method of driving the 30-in. stroke two-cylinder engines on the Great Western Railway was with a 30 per cent cut-off and a partially closed regulator, but Mr. C. M. Keiller, who as a pupil at Swindon Works had some months of firing experience in 1910, states that in his experience this was not the case. At that time, he says, it was the universal practice to get the regulator fully open as soon as possible, and to keep it there, in particular on fast passenger work. With the many coupled engines that had a steam reversing gear it was usual to pull the gear right back to about 10 per cent on the indicator, at which point it would never stay put; when it had drifted down to 25 per cent or so it would be pulled back again. On the "29XX" two-cylinder 4-6-0s control was easier on the engines with screw reverse than those with lever reverse; but the latter had very close overlapping notches in the centre part of the quadrant, giving in effect half-notches, and it was easy to adjust the gear without shutting the regulator.

Today, however, conditions seem to have changed completely. Full regulator and short cut-off working still continues with some express locomotive types, notably the Gresley and Peppercorn Pacifics, which do much of their work on 15 per cent cut-off or thereabouts, but such a practice is anything but general. The outstanding performances of the London Midland Region "Royal Scots" are achieved largely without the regulator being opened further than the first port, and anything much more than half regulator is rare with these engines (although the actual port opening may be wider than is indicated by the position of the regulator handle on its quadrant plate). With the "Britannia" Pacifics, as with many 4-6-0 types, 25 per cent cut-off with partly open regulator is a common working position.

One of the greatest surprises in the 1948 Locomotive Exchanges was the comparative rarity of full regulator working; most surprising of all was the way in which the Western Region "Kings" were handled, in large measure on the first valve of the regulator, and at barely any point with the main valve more than one-half to five-eighths open. I might add, however, that on the last trip on the down "Cornish Riviera Express" on which I was able to observe the footplate working, with a double-chimney high-superheat "King", for most of the journey we had got back to the full regulator and 15 to 17 per cent or so cut-off to which we have been accustomed for so long past. Thus there is, after all, no generally applicable rule as to how locomotives should be handled; it would seem that the ideal relations between regulator opening and cut-off percentage may vary between each class, and to some extent even between different engines of the same class.

It is a measure of what steam can still do in its declining days that scarcely a month passes without some new record being achieved with a steam locomotive. Last month we had the astonishing feats achieved by Bill Hoole on Eastern Region "A4" No. 60007 *Sir Nigel Gresley*, with the Stephenson Locomotive Society's Jubilee Special between Kings Cross and Doncaster; this month I have set out in Table 1 the details of a fine feat achieved by Driver Roberts of Edinburgh Haymarket shed with an "A3" Pacific, No. 60101 *Cicero*, at the

head of the down "Talisman" from Newcastle to Edinburgh.

This is one of the "A3s" that has been rebuilt with double blastpipe and chimney, and which in its rejuvenated form, like others of the class that have been similarly treated, can put up a performance almost indistinguishable from that of an "A4" or an "A1". The normal nine-coach load, of 307 tons tare and 320 tons gross, was almost identical with the full 312 tons of the pre-war streamliner "Coronation" with observation car attached; the latter was allowed 120 min. for the 124.5 miles as compared with the "Talisman's" over-generous 129 min.

The start from Newcastle was one of unexampled vigour, with 54 m.p.h. attained at the top of the 1 in 200 to Forest Hall, and an unusual 82 m.p.h. maximum even before Morpeth. Longhoughton bank, 4 miles at 1 in 170, was breasted at a minimum of 64 m.p.h., and then followed a most enlivening burst of speed with 80 to 94 m.p.h. maintained unbrokenly for more than 20 miles; the average over the 20.5 miles from Christon Bank to Scremerston was 86.8 m.p.h. The "recovery time" complex has now reared its ugly head in the North Eastern Region, which accounts for all the increases in schedule times from York and Darlington, and, over the section under review, from Newcastle to Berwick; as a result of the 4 min. so allowed from Belford to Berwick, with the gains already effected by the engine, *Cicero*, with a time of 57 min. 35 sec. for this initial 67.0 miles, had cut the fastest schedule of the day by *twelve minutes!*

From here onwards there was a slight easing of the engine, though even so, after a permanent way slowing at Cockburnspath the "Talisman" was still 12½ min. inside schedule (and actually 11 min. early) on passing Drem. Signal checks from the 7.44 p.m. from Carlisle to Edinburgh, due in Waverley 10 min. in front of the "Talisman", were now certain, and duly occurred, though the latter came to rest in Waverley at 10.38 p.m., 7 min. early, and in 120 min. 45 sec. from Newcastle. My correspondent puts the net time for the run at 113 min. for the 124.5 miles, 16 min. less than schedule, and this is quite reasonable, allowing a net 12-12½ min for the run in from Prestonpans and 2-1½ min. for the Cockburnspath slack. *Cicero* had maintained an 80 m.p.h. average over the 43.5 miles from Longhirst to Scremerston, and of just under 71 m.p.h. net over the 105.1 miles from Cramlington to Prestonpans.

Mr. T. Haddon, who timed this run, was particularly grateful for the early arrival, as he was planning to proceed by the 10.55 p.m. to Inverness, which is not held if the "Talisman" is late (though *why* not is a mystery, seeing that the Edinburgh train waits no less than 51 min. at Perth before proceeding, and there is a 23 min. margin there for the Forfar connection also). Even if the "Talisman" is only 10 min. late, the Inverness train is not held, and in that event the only alternative is to proceed to Glasgow by the 11 p.m. diesel, spend nearly four miserable hours in the early morning filling the gap between 12.8 a.m. at Queen Street and leaving Central at 4 a.m. and another 24 min. at Perth awaiting the 6.50 a.m. departure, and finally reach Inverness at 10.12 instead of 5.30 a.m. One might have thought that a booked 10.45 p.m. arrival at and 10.55 p.m. departure from Edinburgh Waverley constituted a moral obligation to hold the latter unless the "Talisman" were very late; and in any event with a tare load only just over 300 tons the "Talisman", with one intermediate stop only, ought to be booked into Edinburgh at least by 10.30 rather than 10.45 p.m., in 6½ hr. from London. The equally heavy "Coronation", with *two* intermediate stops, was allowed 6 hr., and was an exemplary timekeeper.

In Table II are a couple of runs on the "Essex Coast Express" of the Great Eastern Line, which must give its regular commuters some very lively experiences; and the second of these performances certainly comes pretty near the "record" category. The standard 8-coach load of 290 tons gross was taken by a "Britannia" Pacific on both runs; I am indebted for the logs to Mr. J. H. Colyer-Fergusson.

On the first, with No. 70001 *Lord Hurcomb*, Driver Morton and Fireman Willett,

Table I
N.E. & SCOTS REGIONS, NEWCASTLE-EDINBURGH
Engine : Class " A3 " 4-6-2 No. 60101 " Cicero "
Load : 9 coaches, 307 tons tare, 320 tons gross

Dist. miles		Sched. min.	Actual m. s.	Speed m.p.h.
0.0	**NEWCASTLE**	0	0 00	—
5.0	**Forest Hall**	—	7 11	54
9.9	**Cramlington**	—	12 10	68
13.9	**Stannington**	—	15 19	78/82
16.6	**MORPETH**	20½	17 15	*45
20.2	**Longhirst**	—	20 50	71
25.6	**Chevington**	—	25 11	78
30.2	**Warkworth**	—	30 03	78/82
34.9	**ALNMOUTH**	37	32 20	*75
37.5	**Longhoughton**	—	34 27	66
39.5	**Little Mill**	—	36 19	64
43.0	**Christon Bank**	—	39 25	81
46.0	**Chathill**	—	41 33	86
49.2	**Lucker**	—	43 55	81½
51.6	**BELFORD**	52	45 40	80
58.6	**Beal**	—	50 12	94
63.5	**Scremerston**	(†4)	53 35	81
65.8	**Tweedmouth**	—	55 33	—
67.0	**BERWICK**	69½	57 35	*25
72.5	**Burnmouth**	—	64 53	59/70
78.2	**RESTON JUNC.**	82	69 55	67
83.2	**Grantshouse**	88	74 50	60
88.0	**Cockburnspath**	—	79 15	75
			p.w.s.	*25
90.7	**Innerwick**	—	82 10	72
95.3	**DUNBAR**	98	86 00	*65
101.1	**East Linton**	—	91 05	69
103.7	**East Fortune**	—	93 13	76½/79
106.7	**DREM**	108	95 28	79/73
111.3	**LONGNIDDRY JUNC.**	—	99 13	75
115.0	**Prestonpans**	—	102 23	68
118.0	**Inveresk**	—	sigs.	*
121.5	**Portobello**	123	sigs.	*
124 5	**EDINBURGH**	129	120 45	—

* Speed restriction † Recovery time

all of Stratford shed, a lively start, with 70 m.p.h. attained up the 1 in 390 to Chadwell Heath, proved a little too lively; any undue energy with the "Essex Coast" is certain to earn a signal check from the 5.23 Shenfield electric ahead until the latter is turned slow road beyond Gidea Park. So it was on this run, and as a result Brentwood bank was begun at 42 m.p.h. and Ingrave summit passed at 39 m.p.h. only. But some first class running followed, with an average speed of 77.9 m.p.h. over the 28.8 miles from Shenfield to Stanway, and such highlights as 84 m.p.h. before Chelmsford, 82 at Witham and after Marks Tey, and a minimum of 75 up the 2 miles at 1 in 222 to Hill House box. So 2¼ min. late at Shenfield was converted to 2 min. early at Colchester; the net time for the 51.7 miles from Liverpool Street was 49½ min. The branch from here was taken under easy steam, and with a departure from Thorpe-le-Soken 1 min. early, Clacton was reached on time.

Table II
E.R. LIVERPOOL STREET - CLACTON-ON-SEA

Dist.	Engine, 4-6-2 No. Load, tons tare/gross	70001 270/290 Sched.	Actual	Speed	70030 270/290 Actual	Speed
miles		min.	m. s.	m.p.h.	m. s.	m.p.h.
0.0	LIVERPOOL ST.	0	0 00	—	0 00	—
1.1	Bethnal Green	—	2 52	25½	3 14	22
			p.w.s.	*15	p.w.s.	*22
4.0	STRATFORD	8	7 49	57	8 02	52
7.3	Ilford	—	11 05	65½	11 37	58
10.0	Chadwell Hth.	15	13 26	70½	14 13	66½
			sigs.	*20	sigs.	*12
16.0	Harold Wood	—	21 24	49½	22 30	56
18.3	Brentwood	—	25 38	42	26 07	56
19.3	Milepost 19¼	—	27 08	39	27 11	55½
20.2	SHENFIELD	26	28 16	55	28 06	66
23.6	Ingatestone	—	31 09	75/84	30 48	82/87
29.7	CHELMSFORD	35	35 46	*70	35 23	*68
32.1	New Hall	—	37 45	76/73	37 19	74
35.9	Hatfield Pvl.	—	40 45	76/69	40 01	87/83½
38.6	WITHAM	43	42 51	82	41 52	94
					p.w.s.	*28
42.2	Kelvedon	—	45 37	81	sigs.	—
44.1	Hill House	—	47 00	75	sigs.	—
46.6	Marks Tey	50	48 56	78/82	sigs.	—
49.0	Stanway	—	50 41	75/76½	sigs.	—
51.7	COLCHESTER	56	54 05	—	58 50	—
2.1	Hythe	—	4 27	35/49	3 24	45/61
4.5	WIVENHOE	8	7 34	*42/39½	6 19	*42/45½
6.1	Alresford	—	10 20	36/54½	8 20	50/65½
					sigs.	*35
8.0	Thorington	—	12 28	51/60	10 44	—
9.3	G. Bentley	—	13 47	56	12 26	54
11.4	Weeley	—	15 47	63½	14 24	70
13.5	THORPE-LE-SOKEN	19½	18 54	—	16 49	—
4.7	CLACTON-ON-SEA	8	9 10	—	7 38	—

* Speed restriction

On the second run Norwich shed provided the engine, No. 70030 *William Wordsworth* (since transferred to Yarmouth), but the placidity of the Lakeland poet was hardly seen in the extraordinarily vigorous performance that Driver Sam Elgram and Fireman Hockley got out of their mount. Elgram will no doubt be remembered as the hero of the record-breaking run with the Crusader special from Liverpool Street to Norwich and back in the spring of 1958. Out of Liverpool Street he was more cautious than his colleague on the first run, but got an even worse signal check from the 5.23, to 12 m.p.h. at Romford. Then followed an astonishing piece of work, for up the entire 3¼ miles of Brentwood bank, mostly averaging about 1 in 103, he kept the speed steadily at 56-56½ m.p.h. This he followed with a rousing 87 m.p.h. before Chelmsford, and then capped his exploits with a maximum of no less than 94 m.p.h. through Witham. The 18.4 miles from Shenfield to Witham were reeled off at an average of 81.3 m.p.h., the easing through Chelmsford included.

It was a sorry reward for such energy that the 5.41 p.m. stopping diesel multiple-unit from Chelmsford to Ipswich was running late, with the result that the "Essex Coast", after a 25 m.p.h. permanent way slowing at Kelvedon, got adverse signals all the way from there to Colchester, reaching the first stop nearly 3 min. late. But the net start-to-stop time from Liverpool Street had been nothing more than 48½ min. for the 51.7 miles. Further delay occurred waiting for the 4.45 p.m. from Norwich to London to get clear on the up road, and Colchester was left 5 min. late.

On the branch some more outstanding work was done; on the short level before Wivenhoe the Pacific reached 61 m.p.h., and after the 42 m.p.h. slowing round Wivenhoe curve speed was maintained at just over 45 m.p.h. up the 1 in 80-140 to Alresford. Matters were then going splendidly when a tardy signalman at Thorington failed to get his crossing gates open to the line in time, and a 35 m.p.h. signal check was the result. Even so, 70 m.p.h. was reached on the level beyond Weeley, and the stop at Thorpe-le-Soken, 13.5 miles from Colchester, was made in the unusual time of 16 min. 49 sec., or 15¾ min. net. On the final stage the mile-a-minute rate was just reached, and the arrival at Clacton was no more than 2 min. late. In all, therefore, this capable crew and their "Britannia" had gained no less than 11½ min. on the total running time of 83¼ min. allowed; their total running time had been a few seconds over 72 min. for the 71.9 miles, including slowing down to and restarting from two intermediate stops.

And now, to conclude, I have one of the latest records of all, and this not with steam but with diesel power. It is the inaugural run, on June 15, of the accelerated "Bristolian", headed by Swindon-built 2,200 h.p.

W.R. "Warship" diesel-hydraulic No. D805 "Benbow" at Paddington with the down "Bristolian" on June 15, 1959. [British Railways

diesel-hydraulic locomotive No. D805 *Benbow*. The well-filled train, with its usual Monday "extra" attached, was made up to eight bogies of 280 tons tare and 300 tons gross. From the start it was clear that the running would be something out of the ordinary — 66 m.p.h. by Old Oak West, 72½ m.p.h. by Ealing, and we had just crossed the "80" line at Southall when we had to slow for the long-continued reconstruction of the Hayes canal bridge, a check that cost about 2¾ min. Recovering rapidly, *Benbow* had reached 85 m.p.h. by Slough, and attained a maximum of 92 m.p.h. on level track beyond Maidenhead, cut short by the permanent speed restrictions through Twyford and Reading, 71 and 75 m.p.h. respectively.

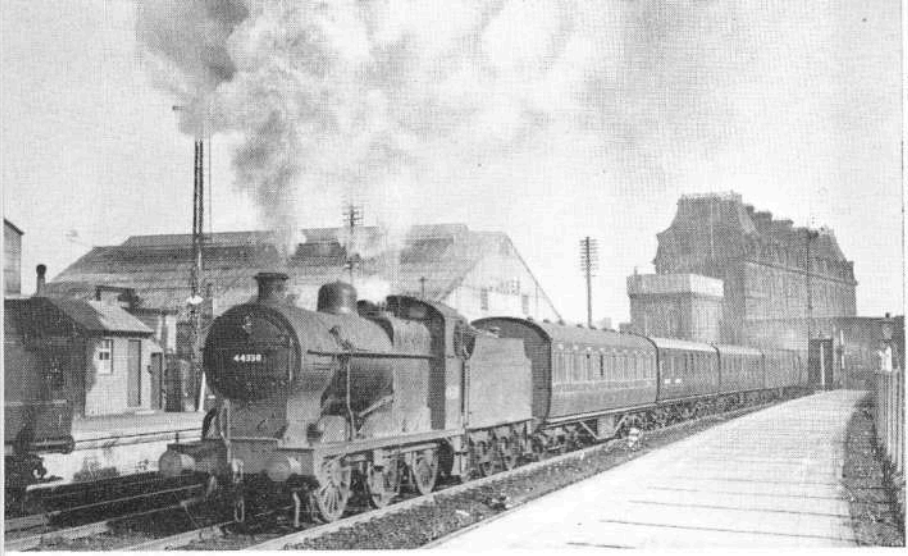
From here onwards it was high speed almost without restriction for the next 70 miles, and full use was made of the opportunity. The diesel showed its capacity to maintain 88-90 m.p.h. indefinitely on the level, and even up the 1 in 754 between mileposts 53½ and 70 we settled down to a steady 86½ m.p.h. We had passed Slough nearly 2½ min. late, but the arrears were recovered by Didcot, and from here onwards time was gained steadily. With 90 m.p.h. at the top of Dauntsey bank, we could easily have reached and exceeded 100 m.p.h. down the 1 in 100 grade, but unlimited maximum speeds on Western Region main lines have now been brought to an end by the Chief

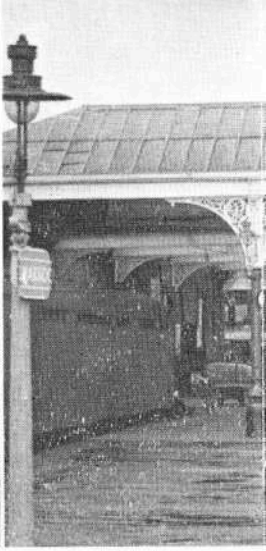
Table III

W.R. PADDINGTON - BRISTOL
Locomotive : B-B Diesel-Hydraulic No. D805 "Benbow"
Load : 8 coaches, 280 tons tare, 300 tons gross

Dist. miles		Sched. min.	Actual m. s.	Speed m.p.h.
0.0	**PADDINGTON**	0	0 00	—
1.3	**Westbourne Park**	—	3 05	46
3.3	**Old Oak W. Jc.**	—	5 16	66
5.7	**Ealing Broadway**	—	7 27	72½
9.1	**SOUTHALL**	10½	10 04	80½
			p.w.s.	*18
11.1	**Hayes**	—	12 45	—
13.2	**West Drayton**	—	15 20	69
16.2	**Langley**	—	17 46	79
18.5	**SLOUGH**	17	19 23	85
24.2	**Maidenhead**	—	23 27	90/92
31.0	**Twyford**	—	28 01	*71/80
36.0	**READING**	31	31 56	*75
38.6	**Tilehurst**	—	34 03	—
41.5	**Pangbourne**	—	36 10	83½
44.7	**Goring**	—	38 26	86½
48.5	**Cholsey**	—	40 58	88
53.1	**DIDCOT**	44½	44 08	88
56.5	**Steventon**	47	46 31	87
60.4	**Wantage Rd.**	—	49 07	86½
63.9	**Challow**	—	52 31	86½
66.5	**Uffington**	—	53 23	86½
71.6	**Shrivenham**	—	56 46	88
77.3	**SWINDON**	62½	60 41	89
82.9	**Wootton Bass.**	—	64 26	92/90
87.7	**Dauntsey**	—	67 35	95
94.0	**CHIPPENHAM**	74½	71 41	89
98.3	**Corsham**	—	74 40	88
101.9	**Box**	—	77 09	*75
104.6	**Bathampton**	—	79 22	*68
106.9	**BATH**	85½	81 47	*33
107.9	**Oldfield Pk.**	—	83 15	—
111.3	**Saltford**	—	86 19	76½
113.7	**Keynsham**	—	88 12	79
116.7	**St. Annes Pk.**	—	90 41	*69
118.3	**BRISTOL**	100	93 48	—

* Speed restriction





SOUTH-WEST SCOTTISH SCRAPBOOK

Top left : Class "4F" 0-6-0 No. 44330 leaves Ayr with a Glasgow-Girvan semi-fast on March 30, 1959. [G. H. Robin

Top right : "Royal Scot" 46133 "The Green Howards" right away from Kilmarnock up "Thames-Clyde Express" on 17, 1955. [Phil

Civil Engineer imposing a "ceiling" of 90 m.p.h.; after reaching 95, therefore, *Benbow* was eased until the train was on the level again. A speed of 93-94 m.p.h. continued on level track almost to Chippenham.

Up the 1 in 660 to Corsham we did not fall below 88 m.p.h., and this speed was continued until we slowed for the curves from Box to Bath. Bath station was taken most cautiously at 33 m.p.h., and a final sprint to 79 m.p.h. at Keynsham preceded a cautious approach to Bristol. A funereal crawl along the platform to the stop at Temple Meads explains why all the casual observers claimed a gain on schedule of 7 min.; the actual start-to-stop time, however, was 93 min. 48 sec., and the net time 91 min., 9 min. inside the new schedule, representing a net start-to-stop average of 78.0 m.p.h. So far as I am aware this is the fastest run yet made from London to Bristol.

My allowance of 2¼ min. for the Hayes check is based on the scheduled 6½ min. from Southall to Slough, which after having attained 80 m.p.h. by Southall, we should have just kept. With a clear road and a due observance of speed restrictions, it would be possible for one of the "Warship" diesel-hydraulics to reach Bristol in 90 min., but not, I doubt, in any less time without exceeding the overall 90 m.p.h. limit. Actually our average speed over the 60.4 miles from Pangbourne to Box was 88.4 m.p.h., and this needed the controller full on throughout, except when descending Dauntsey bank. So no cut would be possible in this time.

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Bottom left : The 3.29 p.m. Stonehouse-Glasgow (Central), headed by a Class "4" 2-6-4T, crosses Stonehouse Viaduct on March 25, 1959. [I. S. Pearsall

Bottom right : A scene on the Dalmellington branch, now operated with diesel railbuses. An Ayr-Dalmellington train, headed by Class "3" 2-6-0 No. 77017, was photographed near Cutler Bridge on March 28, 1959. [G. H. Robin

4-6-0 No.
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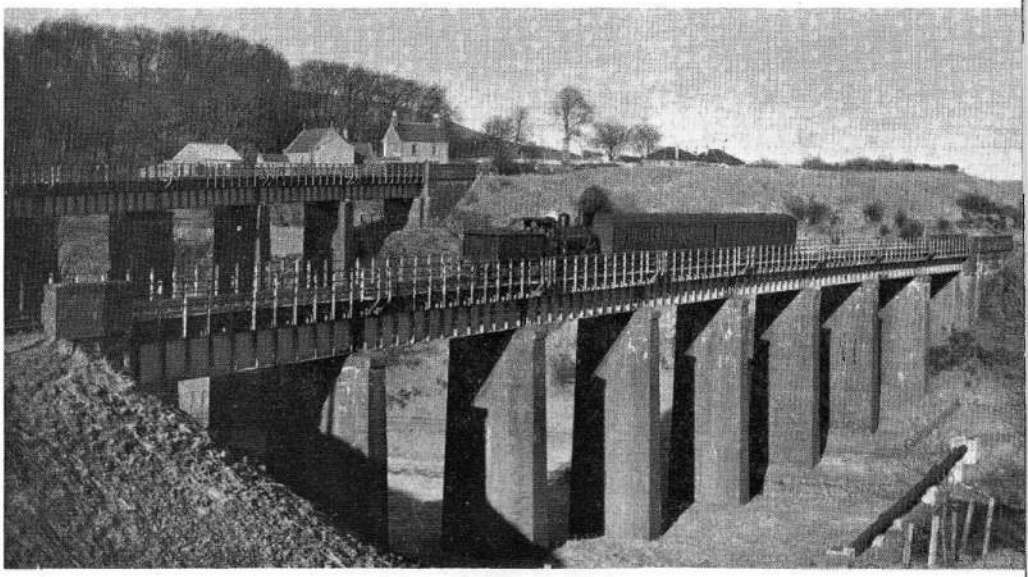

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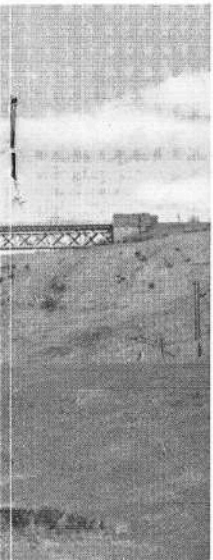
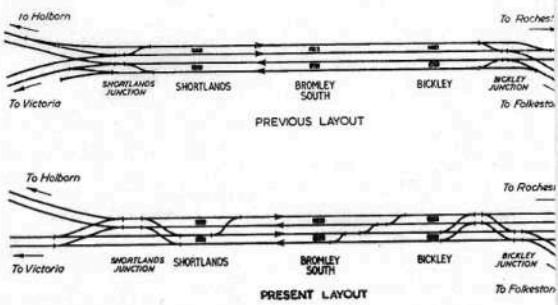


The Modernised Kent Coast Main Line of the Southern Region

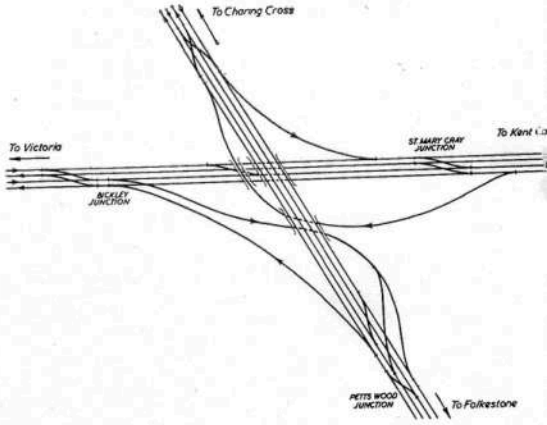
STAGE 1 of the Kent Coast 750V.d.c. third-rail electrification scheme of the Southern Region was brought to fruition on June 15 when public electric services were introduced between London, Ramsgate and Dover via Faversham. Previous articles in *Trains Illustrated* this year have described the electric locomotives, multiple-units and diesel locomotives that have come into service on this main line, and also the accelerated and improved timetable that is now in force. On June 9, a special inaugural multiple-unit train was run from Victoria to Margate, carrying a large official party including the chairman of the B.T.C., Sir Brian Robertson, and members of the press; this provided us with the opportunity to see something of the comprehensive civil engineering and signalling works that have been carried out in Stage 1.

The first major engineering operation was necessary between Shortlands and Bickley Junction. At Shortlands Junction the double-track exit from Victoria via Herne Hill converges with the double-track carrying a suburban service to and from Holborn Viaduct and traffic taking the alternative route out of Victoria via the Catford Loop. From Shortlands through Bromley South to Bickley there are four tracks, which previously were paired by direction, so that the paths of down trains from Herne Hill and up trains to the Catford Loop or to Holborn conflicted at Shortlands Junction; moreover, as it crossed the layout here, up local traffic to Holborn Viaduct blocked the path of up fast trains via Herne Hill to Victoria. The entire layout from Shortlands to Bickley Junction has now been re-organised, pairing up and down lines throughout, and in addition the curvature of the approaches to Shortlands Junction from the London direction has been alleviated, enabling the restriction on the Herne Hill line to be raised from 40 to 60 m.p.h., and that on the Catford Loop to be lifted from 20 to 40 m.p.h. The curvature has also been eased at Bromley South, where the platforms have been lengthened to take 12-car trains and the station accommodation modernised; now through trains can take the outer platform tracks at a maximum of 60 m.p.h. instead of the 30 m.p.h. formerly enforced. Several new crossovers have been laid in to interconnect the four tracks between Shortlands and Bickley Junctions, and allow the operators much more scope to sort the conflicting streams of traffic, to and from Herne Hill and the Catford Loop in the west, and to and from the Tonbridge-Folkestone and Gillingham-Ramsgate routes in the east.

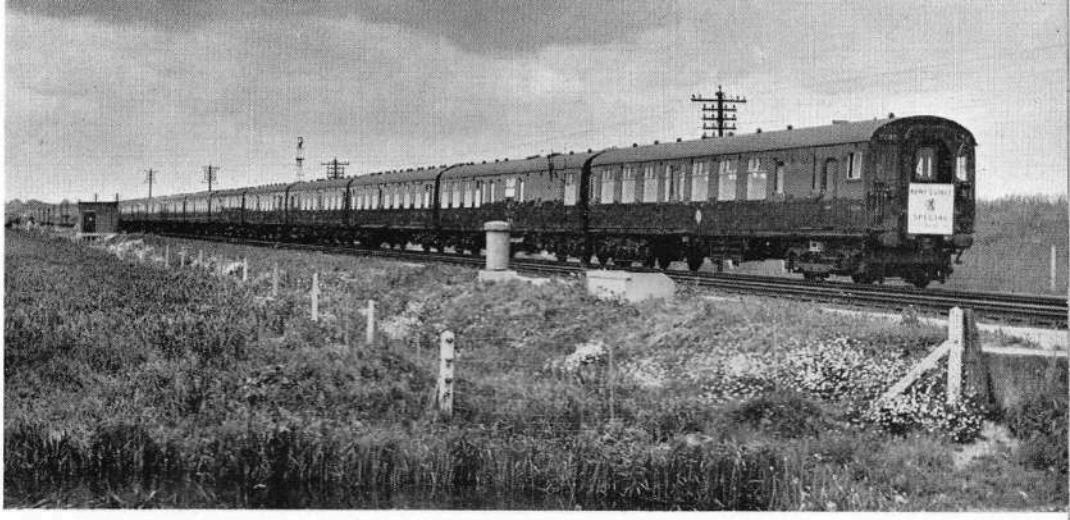


New and old layouts between Shortlands Junction and Bickley Junction.

The complicated system of flying junctions in the area between Bickley Junction and St. Mary Cray, where the Charing Cross-Folkestone route bridges the Victoria-Chatham-Kent Coast lines and there is inter-connection between the two, has been completely reorganised. Four-tracking on the Kent Coast line previously terminated at Bickley Junction, but it is now extended through St. Mary Cray to Swanley, with up and down lines paired. Eleven bridges and a viaduct in the five-mile stretch between Bickley Junction and Swanley had to be rebuilt to provide width for the two additional tracks and several old bridges had to be completely demolished. The alteration of the layout on this route demanded modification of its connections with the four-track Charing Cross-Folkestone main line, and offered an opportunity to re-locate the sharply curved spurs, over which severe speed restrictions have been necessary in the past. Boat trains can now take the connections from the Victoria direction to the Folkestone line at 50 m.p.h. both ways, instead of 30 m.p.h., and 50 m.p.h. is also allowed over the spurs between the Charing Cross main line and the Kent Coast route.



The new junctions in the Chislehurst area.



Above : The inaugural Kent Coast electric train, conveying the chairman of the B.T.C. and a large official party from Victoria to Margate (the leading unit came from Dover and was attached at Faversham), east of Herne Bay on June 9, 1959.
[P. Ransome-Wallis

Right : Substantial diversions of Kent Coast traffic were necessary on May 31 when the new layout in the Chislehurst area was commissioned. The 12.45 p.m. Cannon Street - Ramsgate, headed by rebuilt "West Country" Pacific No. 34004 "Yeovil" was photographed on the Dartford loop near New Eltham.
[D. Cross

Right : Ballasting in progress on the new four-track section near Bickley Junction on May 31. In charge of the ballast train is Type "2" 1,160 h.p. diesel-electric No. D5010.
[D. Cross

St. Mary Cray station has been completely rebuilt, as illustrated last month.

At Chatham the main platforms of the station have been extended to accommodate 12-car trains and as a result the up and down slow lines and the up sidings have been taken out; reconstruction of the platform buildings is still at the planning stage. To offset the loss of the loops at Chatham additional up and down lines extending for 2¼ miles have been laid between Rainham and Newington. Further track-laying was necessary on the Sheerness branch, the single line of which has been doubled for three miles from Sittingbourne Middle Junction, where double-track connections from Sittingbourne Western and Eastern Junctions converge to complete a triangle, to a point south of Swale Halt; this enlargement was essential to provide track capacity for the new service of three multiple-unit trains an hour on the branch without inconveniencing the local freight traffic. Apart from the lengthening of station platforms throughout the area involved to accommodate 12-car trains (in all, 35 stations had to be rebuilt in some degree) and the provision of new servicing and maintenance installations, this completes the major civil engineering works of Stage 1.

Colour-light signalling and track circuiting have been installed throughout from Victoria to Ramsgate, including the Catford Loop, providing for a 2½-min. headway between stopping trains (except between Margate and Ramsgate, where it is 3 min.) and, generally speaking, a 3 min. headway between expresses. The first new signalbox encountered is at Shepherds Lane, Brixton, which was described in our June issue. The next is at Beckenham Junction, where a route-relay interlocking apparatus with push-button route-setting on a diagram representing the layout, has been installed to control the junctions with the New Beckenham and Crystal Palace lines. The former boxes at Shortlands and Bromley South have been replaced by a new cabin at Shortlands, of similar design and method of operation to that at Beckenham Junction.

An extremely busy new cabin is Chislehurst Junction, where the route-setting panel is of slightly different pattern from those just described. This replaces seven signalboxes of the old type and exercises control over both the Kent Coast line and the Charing Cross-Tonbridge-Folkestone route; it is linked temporarily with Grove Park and Orpington boxes on the Tonbridge line until this is re-signalled as part of Stage II. The points at Fawkham Junction, divergence of the Gravesend West branch, which is now singled and operated by electric key-token instruments, have been modified for power operation from the existing Farningham Road box. Rochester has a new power-operated, route-setting panel box, which replaces mechanical cabins at Chatham goods sidings and Chatham station, and so has Rainham.

The four boxes which previously existed at Sittingbourne have been replaced by one power-operated box that also controls the entire Sheerness branch by C.T.C., on a new system described in our September, 1958 issue, page 472. Three local relay interlocking panels have been set up on the Sheerness branch for use in case of emergency, but they are normally operated from the route-setting panel in the Sittingbourne box, which also controls the lift bridge over the Swale. The last of the new power-operated route-setting boxes in Stage 1 is at Faversham.

The completion of the eight new signalboxes has achieved the abolition of 31 of the cabins previously controlling the main line. A further 23 cabins are still in use, of which only those at Swanley, Gillingham, Margate and Ramsgate have essential functions in the continuous control of traffic, while Strood Junction box governs the convergence of the North Kent and Kent Coast main lines west of Rochester; the other boxes have been modified to suit the new arrangements and many of them are no longer manned continuously. In a number of cases provision is made for alteration to automatic signalling when a cabin is switched out, so that, for example, it is possible for all signalboxes throughout the 16 miles from Swanley to Strood Junction to be unmanned without reducing the traffic headway. The whole main line is now covered by a magazine train describer system, and descriptions normally are originated from Herne Hill, Beckenham Junction, Shortlands, Chislehurst Junction, Swanley, Strood Junction, Rochester, Gillingham, Rainham, Sittingbourne, Faversham, Westgate, Margate and Ramsgate.

The only regular passenger service between London and the Kent Coast via the newly electrified route that is not being operated by multiple-units is at present the "Night Ferry", on which the new 2,500 h.p. electric locomotives are employed. The "Golden Arrow" and other regular boat trains are still steam-hauled via Tonbridge and Ashford, but relief services are being run with multiple-units via Chatham.

THE G.E. "1500" CLASS 4-6-0s

(Concluded from page 365)

wrote, "some of the sparks are no doon yet". I shall never forget that 7-minute run for all the harm such treatment did the boiler, the engine or the fireman. It is not often that yard-long flames can be induced up a chimney these days, but I had the Southend shedmaster on the engine with me and he can be my witness. Neither he, nor I, nor the driver, Ron Meeson, is likely to forget it in a hurry.

MEMORIES OF KENT COAST STEAM

Above : Class " C " 0-6-0 No. 31683 heads an unidentified empty stock working past St. Mary Cray.

Below : One of the last regular "N15" 4-6-0 turns on the Kent Coast main line was the 11.35 a.m. Victoria-Ramsgate, seen here leaving Bromley South at the end of April behind No. 30803 " Sir Harry le Fise Lake."

[D. Cross

Above: An express for Munich leaves Ulm behind Bo-Bo electric locomotive No. E10.164. The 115 4,400 h.p. locomotives of this class are for express passenger service; weight is 84 tons and maximum speed 93 m.p.h. The 123 Type "E40" Bo-Bo units for mixed traffic differ from the "E10" only in gear ratio, braking methods and 1½ tons lighter weight. The other standard D.B. types are the 65-ton "E41", a 2,850 h.p. Bo-Bo for lightweight passenger work (69 locomotives), and the 123-ton "E50", a 6,000 h.p. Co-Co for heavy freight haulage (41 locomotives).

[C. P. Boocock

Left: Post-war D.B. 2-6-2 No. 23.004 pilots a 4-6-4T out of Bonn on a Cologne-Koblenz local of modern close-coupled six-wheelers; this main line is now electrified.

[G. J. Jefferson

MODERN GERMAN MOTIVE POWER

Left: A "V200" class diesel-hydraulic unit on the outskirts of Cologne. Note the length of the modern D.B. stock of which, apart from the leading van, the train is formed.

[I. S. Pearsall

The German Federal Railway today

1.—Impressions of a week-end visit

by G. FREEMAN ALLEN

FIRST and immensely favourable impressions of the D.B. — the Deutsche Bundesbahn, or German Federal Railway — were acquired before I had even crossed the West German border. As soon as a Dutch electric locomotive swept the eastbound "Rheingold" express out of Hook of Holland I was conscious of a standard of riding and sound insulation in palpable contrast to that on the other side of the North Sea. The difference was still more noticeable when the "Rheingold" had crossed the Dutch-West German border at Venlo.

The D.B. has pursued the most extensive programme of long-welding of rails (much of it on prestressed concrete sleepers) in Western Europe — so much so, that in a weekend of considerable travel in its trains one began to notice the presence of orthodox railjoints almost more than the absence of them. The Dutch, like ourselves, have not eliminated the faint trace of joint sounds from travel over their welded rails; but the Germans have managed it, at least so far as my hearing goes, and this, coupled with very efficient sound insulation methods of modern D.B. coach construction, extrudes the sounds of travel to a degree I have never before known in a rail vehicle. Travelling at speed through open country over D.B. welded track, the only sensations of movement were an occasional lazy and well-cushioned bounce from the coach's excellent suspension and the muffled rush of air past the train. In case I was being beguiled by the D.B's. generous hospitality, I rode for a mile or two on my return "Rheingold" journey to the Hook in the through Italian coach from Milan and the difference was unmistakable. Another significant point — it wasn't until I walked down the corridor to the end of the D.B. coach on the outward journey that I realised we had a fairly substantial "flat" on one of the bogies.

The standard D.B. first class coach — the "Rheingold" has no second class — is very comfortable as well as quiet-riding. The individual headrests are adjustable by the simple device of sliding them up or down between the wings of each seat, and little metal footrests are stored under the seats for the passenger's use; if you have the place opposite you vacant and feel like a nap, you can slide your own and the facing seat outward to meet each other and form a very relaxing couch. Even a Rolls-Royce owner, I began to feel, would be a stoic to travel across Europe by car when the "Rheingold" is on offer.

An eye-catching characteristic of the modern D.B. coach is its length, for the standard underframe is 86 ft. 7 in. over buffers, as compared with 67 ft. 1 in. of the B.R. standard long underframe. The commonest interior layouts in the "Umg-Wagen" series of coaches, introduced in 1955 for express service and employing the 86 ft. 7 in. underframe, are the first, with 10 compartments, the composite, with five first and six second class compartments, and the second, with 12 compartments; first or second class, each compartment seats no more than three a side. There are also versions that divide the body space between compartments and a restaurant-kitchen section. Disc brakes are being standardised on D.B. rolling stock.

Lightweight construction keeps the individual weight of each coach down to 36½ tons in the case of the second class cars, or 37¼ tons the first class coaches; even though the Germans enjoy three-a-side comfort in their second class over long distances, therefore, they are carried at a negligibly increased cost of coach weight per passenger by comparison with the 64 four-a-side travellers in a standard B.R. 32-ton open second, while the 42 passengers in a 33-ton B.R. corridor first are decidedly more expensive in terms of coach weight per person than their German counterparts. Incidentally, there is no need to scrutinise each coach carefully as a D.B. train pulls in to identify its class, for all-first coaches are painted blue and all-second class green; composites are also green, but the first class accommodation is indicated by a continuous white line between the cantrail and the tops of the compartment windows.

A service for passengers that I thought particularly useful was the four-page leaflet placed on each seat of every express; this sets out the itinerary in diagrammatic form and also the departure times of every connecting service at each of the express train's intermediate stops. A separate leaflet is produced for each express. The leaflet of the Munich-Hamburg-Kiel "Gambrinus", on which I rode later from Frankfurt to Koblenz, drew attention to the fact that this was one of the three dozen businessmen's services (including the "Trans-Europe-Express" trains) on which a secretarial service is provided, and from which, on certain sections of the journey, you can telephone your office or clients direct. Employment of the secretary costs no more than 2s. 6d. an hour and she will type your correspondence and post it at the first convenient stop of the train. Another useful service provided for D.B. travellers on over 60 long-distance trains is a special compart-

ment to which mothers can retire with young children.

The Netherlands Railways are now entirely electrified and dieselised and the only steam power we saw between Hook of Holland and Venlo was a rusting 4-8-4 tank parked forlornly in a siding on the outskirts of Rotterdam. But at Venlo the "Rheingold's" Dutch electric locomotive was replaced by one of the D.B's. post-war "23" class 2-6-2s, the modern mixed traffic successor to the Prussian "P8" 4-6-0 which, nevertheless, is still very much in evidence. These lean-looking 2-6-2s, with their high-pitched boilers and rimmed chimneys, bear a speaking as well as a slight facial resemblance to the B.R. standard steam range; it might well have been a "Britannia" picking up its heels as our "23" spoke up deeply and lifted the "Rheingold" out of Venlo — but capital is lacking to build the new station the D.B. would like, at least for the time being. However, since the war a superb new frontage matching the astonishing and modernistic reconstruction of the heavily war-damaged city itself has been grafted on to the train shed. From the capacious concourse, with its deep-windowed facade through which one looks across the square to the city's majestic cathedral, passageways radiate to a well-equipped shopping centre (that is always open — even at weekends — to a late hour), a news cinema, a bar and a delightful restaurant.

At Cologne I encountered modern German traction for the first time. Diesel multiple-units on view ranged from the latest, the opulent German "Trans-Europe-Express" unit pausing on its run as the "Saphir" from Frankfurt to Ostend, to the

The 87½ ft. length of the modern West German coach is arresting in this view of one of the latest sleeping cars operated by D.S.G. (The German Sleeping and Dining Car Co., which operates the sleepers and diners within Western Germany and on some international routes). It is an air-conditioned car designed for multi-class use; each of its 11 compartments can be adapted for one, two or even three berths one above the other.

and there was a homely feeling, too, about the fore-and-aft motion that was very noticeable in the leading coach of the train. These 80-ton machines have 5 ft. 9 in. driving wheels, two 20½ in. by 26 in. driving wheels and a boiler pressure of only 200 lb./sq. in., with the object of reducing maintenance costs; the boiler is welded throughout, as are all the firebox stays and the one-piece frame structure.

The 2-6-2 worked the "Rheingold' as far as Cologne, the great rail traffic hub of North-West Germany, where the train reverses and carries out traffic in through coaches with the Dortmund-Dusseldorf-Munich "Rheinpfeil", handing over a car from The Hook to Munich in exchange for one from the Ruhr to Basle. The famous *Hauptbahnhof* was alive with trains — in fact, the traffic has outgrown its capacity, earliest, one of the 1938 three-car diesel-hydraulic units, now known as Type "VT06", with which the Germans set the European passenger train speed standard before 1939. The "VT06" had just arrived at 9.57, on the businessmen's 6.45 a.m. "Dompfeil" from Hanover. I was told that the "VT06" had not long been rostered to the "Dompfeil" working, which was previously steam-hauled, and that its patrons had hard words for the difference in riding that had resulted from the exchange of stock.

The Germans had pioneered the European use of diesel multiple-units, or *triebwagen*, for fast long-distance travel before the war and they resumed development after it. In 1953 and 1954 the D.B. obtained 14 three-car and six four-car units of the "VT08" type, readily recognisable by their smoothly rounded ends and fuller lines, which provide

Above : The "V80" type is a 63-ton diesel-hydraulic B-B designed by Krauss-Maffei of 800 or 1,000 h.p., employing either a Daimler-Benz, an M.A.N. or a Maybach engine, and either Mekhydro or Voith transmission, used for light passenger and freight work.

Right : The D.B. is placing very large orders for this new "V100" type designed by Mak of Kiel for mixed traffic work on secondary routes. It is a 62½-ton 1,150 h.p. B-B with a maximum speed of 56 m.p.h. using a single Maybach MD 650 or M.A.N. L12V18/21m engine and a Voith two-tongue convertor transmission of new design.

DIESEL UNITS OF THE D.B.

Right : Germany's standard shunter is the 650 h.p. diesel-hydraulic "V60" type of 47 tons. It was designed by a consortium of eight German manufacturers. The standard engine is a supercharged Maybach Type GT06 or GT06A, except in some experimental versions of the "V60", and the transmission is a Voith type.

Below : The German Federal Railway's diesel-hydraulic "Trans-Europe Express" unit. The other end of the seven-car set is similarly shaped.

Above : A Type "VT08" diesel-hydraulic multiple-unit passes the central signalbox at Frankfurt main station. This cabin controls the whole of the rail network surrounding the city.

many of the 50-odd named train services now appearing in the West German timetables. (A similar-looking unit for fast inter-urban services is classified "VT12"). The accommodation in both pre- and post-war units is exclusively first class, with all seats in compartments, and each includes a dining section. The "VT06" units are each powered by two 600 h.p. engines, but one 1,000 h.p. engine suffices for a three-car "VT08" set; the four-car "VT08" sets, however, have two 1,000 h.p. engines. In all cases, the transmission is hydraulic, to which, in its various forms, the Germans have been firmly wedded since the war.

The "VT06" and "VT08" sets can operate in multiple with each other and the timetables feature one or two cases of daily multiple-unit working. The most interesting of these is the "Rheinblitz" service, which is virtually four trains in one. From Dortmund two three-car units, trains F38 and F138, set out coupled at 5.33 a.m. for Cologne via Essen and Düsseldorf, followed three minutes later by two more three-car sets in multiple, trains F8 and F28, which make for Cologne via Elberfeld and arrive three minutes ahead of F38 and F138 at 7.6 a.m. All four units are coupled together at Cologne and at 7.13 they begin a two-hour run as one train up the Rhine valley to Mainz. Here F38 and F138 are separated and after a four-minute stop resume in multiple to Frankfurt and Wurzburg, where they part company, F38 making for Nuremberg and F138 for Munich. From Mainz F28 also heads for Munich, but taking a different route via Stuttgart; it runs a little further, to Mannheim, in the company of F8, and is thereafter on its own, reaching Munich 16 minutes ahead of F138 at 2.34 p.m. The remaining unit, F8, runs to Basle. The "T.E.E." service, by the way, also features m.u. working, for the "Saphir" and "Rhein-Main" run as one from Frankfurt to Cologne.

In 1954 the D.B. introduced two experimental articulated multiple-units of lightweight construction, one a seven-car day train for the Hamburg-Munich "Blauer Enzian" service and the other an eight-car night train of particular interest for the Hamburg-Zurich "Komet" service. Apart from the elegance of the latter's interior appointments, which included a dining section and bar open all night, a conference room for business executives and a single saloon with reclining seats in addition to extremely comfortable sleeping berths, the "Komet" train was constructed on a variant of the Talgo principle, with short cars linked by single-axle bogies. It seems to have had no more success than the U.S. lightweights, however, for both day and night units have been retired from service and the "Blauer Enzian" and "Komet" are now conventional locomotive-hauled trains. Apart from anything else, the lightweight "Komet" set

must have been costly to run, for its total passenger accommodation was no more than 48, of which 36 had sleeping berths.

The latest D.B. multiple-unit venture, of course, is their contribution to the "Trans-Europe Express" fleet. One of these was specially turned out later in the weekend to give our party a sample of its comforts from Frankfurt to Heidelberg and back. The riding was slightly inferior — but only slightly — to that of a post-war D.B. locomotive-hauled coach, but the sound insulation was as perfect; even in the end cars one heard no sound from the 1,100 h.p. main engine mounted in each bulbous nose and only a hint of the auxiliary engine-generator set, sited behind the driving cab, that powers the lighting, air-conditioning, etc. If one accepts the official D.B. explanation, which after my travels I found almost incredible, that the state of their track still permits of a maximum of 87 m.p.h. (140 k.p.h.) only on a few selected stretches, it must be concluded that it *is* possible to design a multiple-unit bogie and suspension that gives unexceptionable riding. The expensive interior luxury of the T.E.E. unit was outlined in our October, 1957 article on the scheme and need not be recapitulated, save to confirm that the reality, with its concealed lighting, is as delightful, tasteful and relaxingly comfortable as the pictures suggested. (I was particularly fascinated by the electro-pneumatic doors at the vestibule end of each car that fly open at a touch and close automatically after a decent interval to allow passage). As to the profit-and-loss of the T.E.E. scheme, my information conflicts; the D.B. officially claims it has successfully wooed the European businessmen, but unofficial contacts in close touch with the European scene suggest otherwise. I can only add that the "Saphir" arrived in Cologne from Ostend quite well-filled on the last evening of my short visit, but was less than half occupied on its departure.

The "T.E.E." might be the last German multiple-unit venture, for I gathered from the D.B. management that their interest in multiple-units for long distance work was waning as more diesel and electric locomotives came into service. I have yet to travel in any multiple-unit that attains the riding standards of a locomotive-hauled coach, but an equally important consideration to the railway operator is that a multiple-unit locks up expensive power plant that might have other uses, were it self-contained as a locomotive, when the train is out of use.

From Cologne we resumed our journey to Frankfurt behind one of the elegant 2,200 h.p. "V200" diesel-hydraulic locomotives of the D.B. This is, of course, the type on which the Western Region's Swindon-built "Warship" class units are based, the most noticeable difference between the two being the compression of the B.R. unit's shape to meet the demands of our loading gauge, with unavoidable detriment to the well-balanced proportions of the German original. Another extremely interesting difference is that the German "V200" does not rely on a standard power equipment. The high-speed twelve-cylinder supercharged "V"-form engines of 1,100-1,200 h.p., two per locomotive, may be of either Daimler-Benz, M.A.N. or Maybach manufacture; moreover, the transmission may be either Maybach-Mekydro, with torque converter and allied automatic four-stage gearbox, or Voith, with three torque converters, each for a different speed range. The locomotives are designed so that both engines and transmissions are entirely interchangeable, and with the minimum of trouble; not only that, but they are interchangeable with the power plant of the "VT08", "VT12" and "Trans-Europe Express" multiple-units, and with some smaller diesel locomotives in the D.B. range. This is the kind of relentless standardisation, of course, that makes a dieselisation programme pay dividends in more than one column of the ledger.

The April issue of this journal reported that Krauss Maffei, prime agents in the design of the "V200", had developed a 101½-ton 3,000 h.p. version of the locomotive, and there has since been evidence that Swindon is at least interested in the uprated engines and transmission system of higher capacity that it incorporates. The D.B., however, is content with the existing "V200" and does not contemplate acquisition of any higher-powered units; nor, I gather, does it have any need to work "V200s" in multiple. On this score, I was certainly surprised to see how lightly loaded many German expresses were, even allowing for the greater passenger capacity of their long coaches; I noted a number of expresses with no more than five or six post-war bogies, including restaurant car, the palm of my week-end going to the morning express from Koblenz to Luxembourg, which consisted of only two lightweight coaches and a burly Class "01" 4-6-2 when I saw it bustling up the beautiful Moselle Valley.

The Rhine Valley combines great beauty with testimony to Western Germany's astonishing economic activity. The main line up the river's west bank, through Bonn and Koblenz to Mainz, has been recently electrified on the D.B's. chosen overhead system of single-phase 16⅔ cycle 15 kV. a.c. and carries the bulk of the North-South passenger traffic, some of it diesel-powered. Across the river, and continuously visible from the west bank in the narrow and picturesque stretch of the valley from Koblenz to Bingen, is the alternative route from Cologne to the south, which is heavily occupied by freight traffic. (Some of this freight is worked by Franco-Crosti-boilered 2-10-0s based at a depot on the east bank; only the "50" class 2-10-0s modified in this way are still in action, the earlier "42" class, I learned, being retired

MODERN GERMAN STATION ARCHITECTURE

A new through station has been completed at Heidelberg since the war. These views show (**above**) the frontage at street level and (**below**) one of the stairways linking the spacious concourse with the platforms.

from service with troubles similar to those that have affected our own Crosti-boilered 2-10-0s). In between the two lines of railway, the river is never bare, not of one massive barge, but of streams of these huge craft as far as the eye can see, while the main road is busy with lorries, the majority of them with a ponderous trailer in tow.

The D.B., like B.R., is feeling the pinch of competition from long-distance road hauliers, who are substantially increasing their freight tonnage every year. Unlike B.R., however, the D.B. has no licence from a 1953 Transport Act to offer competitive rates; it is still hamstrung by antiquated legislation passed in the railway's monopolistic days. For example, the long-distance road haulier and the railways are bound by law to charge the same price — but the road transport charge covers a door-to-door transit, whereas the railway's rate does not; for short distance traffic the road haulier is allowed to undercut the railway's fixed charges by a considerable amount.

An important difference between the D.B. and B.R. is that West Germany still seems to regard its railways as a public service, though there must be a happy medium between the prodigality with which the Bonn Government subsidises some money-losing operations of the D.B. and the deficit fixation in this country. There is a wide range of traffics, from commuters and schoolchildren to potatoes and fertilisers, that the D.B. is required to carry at less than cost; moreover, the D.B's. own efforts to reduce its network to modern needs by cutting out loss-making rural branch and secondary main line services have been largely abortive, owing to political and local antagonism. The huge and highly standardised fleet of four-wheeled railbuses operated by the D.B., which perpetuates the German tradition of non-bogie vehicles for local passenger work, would rejoice the heart (and, as in this country, jar the body) of our railway preservers, developers, reinvigorators and other assorted branch line partisans, but doubts whether it would be quite as sizable if the D.B's. inability to keep out of the red since 1951 had been viewed with the same Governmental coldness and impatience for economies as the current financial state of B.R. For the past three years, indeed, the annual deficit of the D.B. has run up to £40-60 millions, despite an increase in both passenger and freight traffic.

While campaigning for modification of the legislation that restricts its competitive ability, the D.B. has high hopes of its modernisation programme. New steam locomotive construction ended with the prototype Class "10" high-speed 4-6-2, described in our September, 1957 issue, of which only

two were built. Some 8,500 steam locomotives remain in service and this stock will be progressively reduced to about 3,400 in step with dieselisation and a 15kV, 16⅔-cycle a.c. electrification programme of more than 5,000 route miles (over 2,000 route miles have been electrified so far).

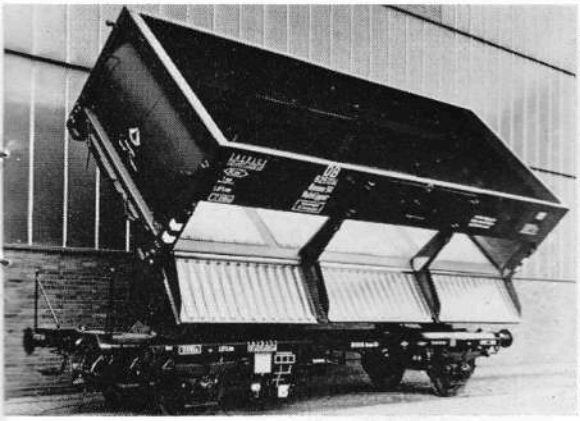
Inevitably, it is the older, non-standard steam types that are disappearing; on my week-end visit, which took me as far as Frankfurt, it was rare to see anything in steam but one of the well-known 4-6-2, 2-10-0, 2-8-0, 4-6-0, 2-6-2 or 0-8-0 types, all sounding as sweetly maintained as sewing machines. One important modification that is still being pursued with steam is conversion from coal to firing with residual oil, which the D.B. finds 10 per cent cheaper as fuel; preparation and disposal time at depots is considerably reduced, and when the locomotive is at work the crew can exercise a much closer control of firing to match the demands of each job than with coal.

So far as I could ascertain, diesel traction on the D.B. seems to have outgrown the teething troubles that still beset it in this country, and I heard none of the catalogues of woe that flow so readily from B.R. motive power men. Not the least surprising was the discovery that the D.B. is quite happy with its locomotive-mounted oil-fired train-heating boilers, and does not hanker after the electrical train-heating of which so many British railwaymen dream. (I can certainly testify to the efficiency of a "V200's" train-heating boiler — in fact my only significant complaint of travel on the D.B. is that one must either ride in a stuffy heat or a violent draught, as the deep, one-piece windows permit of no ventilation except by lowering the whole window). A possibly significant difference between D.B. and B.R. practice in undertaking the steam-diesel transition is that the Germans take at least twice as long as we do to train crews and give them a more thorough grounding in the technicalities of their new equipment — including the train-heating boiler. I heard that a party from a Scottish motive power depot had visited the D.B. shortly before I did and that they had been extremely envious of their foreign colleagues on this score.

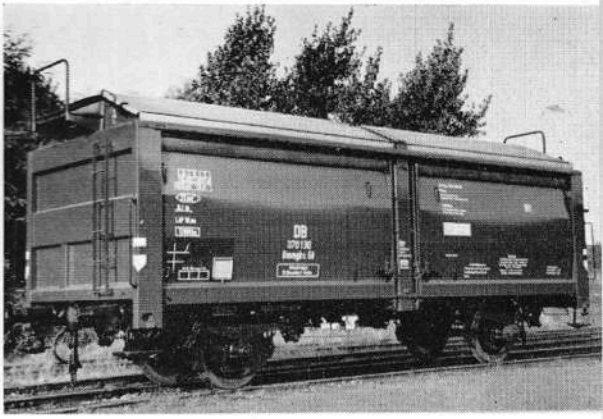
On the subject of diesel traction, another discovery that surprised me was that the D.B's. motive power officers were emphatically in favour of complicated automatic controls to detect and correct faults in the equipment or driving methods, thereby relieving the driver of as much responsibility as possible for his power plant and enabling him to concentrate on the road ahead. In this country, as we have already reported, there is a growing movement against this practice, on the grounds that increased gadgetry adds to possible failure sources.

A department of railways in which the D.B. is particularly addicted to gadgetry is freight stock; indeed, it is ceasing the production of conventional open and covered vans altogether. Anyone travelling across Europe by the "Rheingold" cannot miss seeing at least one German speciality, the two-tiered motor car transporter, for the sidings in the vicinity of the Opel factory outside Mainz are packed with them, all fully laden with shiny new cars. The latest type of D.B. transporter can carry lorries on two levels.

A following article describes in detail one of the more important of the 320 power-operated signal cabins with which the D.B. has already replaced over 600 of its 10,000 signalboxes (its predecessors, incidentally, must have been the most prodigal with signalboxes of any system in the world, to judge from my observations). In this field of modernisation the D.B. is helped by the success of German signalling firms in reducing the first cost of modern, power signalling with route-relay interlocking to at least



A hydraulically-operated tipper of the D.B.; note that the body lifts as well as tips.



This modern D.B. wagon has a sliding roof in two sections as well as two-part sliding sides.

the price level of an equivalent mechanical installation, if not slightly below it: and that before any account is taken of the economies in manpower and through more efficient traffic operation after the new apparatus has come into operation.

I had the good fortune to see inside the biggest of the German power-signalboxes, which is the most advanced, possibly in the world. This is the massive box at Frankfurt, described in detail in our January, 1958 issue, which controls not only the 24-platform main terminal of the city, into which eight routes converge in a considerably wider stream of tracks than that at the south end of York, but a complicated network of avoiding lines surrounding the city. Frankfurt Hbf. is the busiest station in Western Germany and the cabin has to handle over 2,000 trains a day; of these, 1,250 arrive in or start from the main station, where the daily total of all movements is in the region of 4,500. The system of working in the cabin is on the same basis as that at Hanover, described in the ensuing article, but on a much wider scale, with the layout in the neighbourhood of the station divided into five sections, each with its route-setting panel in the main cabin between which train descriptions (by number) and movement indications are automatically transferred as traffic passes through the layout. The five panel-operators are under the control of two Traffic Supervisors seated behind them. One difference that struck me, compared with British cabins of this kind, was the incessant babel of conversation, though it was subdued well below the level of possible confusion by very skilful acoustic devices; every operator is connected by loudspeaker telephone with shunting engine crews and other staff on the ground, and the Traffic supervisors instruct the panel operators by the same means.

Several of the outlying junctions in the Frankfurt area now function automatically. The descriptions of incoming trains transmitted to Frankfurt by signalmen outside the area preface the number with a code letter indicating its route, which is stored by a magazine mechanism that sets up the correct route as the train approaches an automatic junction. This was demonstrated for our benefit. On the vast wall panel at the rear of the operating floor, representing diagrammatically the network surrounding the station, we fixed our attention on the approach from Mainz as an express occupied the first track circuit in the cabin's area of control and its code letter and train number were illuminated in a small panel. As the train penetrated closer to the city, signal repeater lights on the diagram changed from red to green and the train's letter and number moved inward from track circuit to track circuit. Then one of the two Supervisors controlling movements on the periphery of the city, making use of the C.T.C. which enables him to take over personal control for an abnormal movement, deliberately set up a wrong route at one of the automatic junctions ahead of the Mainz train and lights flashed intermittently at the appropriate spot on the panel to denote that the route at that junction was out of correspondence with the normal. Sure enough, when the train was two blocks away from the junction its code letter did the trick, the lights stopped flashing and the junction reset itself correctly without any further human intervention. The advantage of this automatic device, of course, is that it allows the Traffic Supervisors to concentrate more on the broad picture, instead of having to spend much of their time on detail.

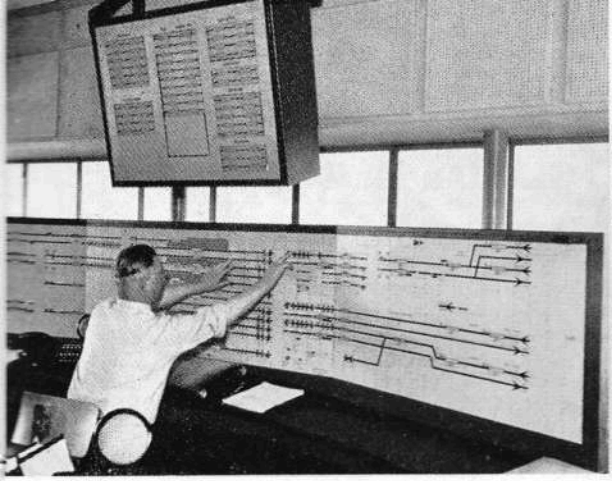
One last abiding impression with which I left Germany was that of the pride and confidence of the D.B. in its equipment and services, which showed even in such details as the very smart and well-cut uniforms of its operating staff and the bearing with which they were worn. I encountered none of the defensive attitude that seems to have become an automatic reflex in some railway quarters in this country. The D.B., one felt, did not even recognise the possibility of defeat in the quest for the traffics a modernised railway is best suited to carry, provided it was able to continue the development of its equipment, both passenger and freight, to the standards expected in the mid-20th Century.

2. Modern signalling at Hanover

by Flt.-Lt. R. M. WILLIAMS

HANOVER is a focal point on the D.B., for it is situated at the inter-section of two important traffic routes — one running basically north-south from Hamburg and Bremen to Frankfurt, Munich and southern Europe; and the other, east-west, from Berlin to the Ruhr, Paris and the Channel ports. All freight traffic bypasses the main station on a loop line to the south of the town, which gives access to the principal marshalling yards and goods stations in the area. Traffic operations in the vicinity of the main station, therefore, deal almost entirely with passenger, parcels and mail trains and associated empty stock and light engine movements, of which there are a total of 650 on a typical weekday.

Hanover Hbf. is a through station with nine platform roads, which merge at the east end into six running roads covering the Hamelin, Goettingen and Lehrte routes; a seventh track signalled for two-way running gives independent access to the locomotive yard and carriage sidings beyond. To the west of the station there are four running roads which form the Wunstorf and Langenhagen routes. The majority of trains serving Hanover are through traffic, which simplifies the operating to some extent, but approximately 65 per cent of these are re-engined



The Hanover Traffic Controller at his panel in the West signalbox. Above his head is the train lateness display panel.

The interior of Hanover West cabin, looking east towards the station.

in the station and a few trains remarshalled as there is some through carriage working between different services.

The east side of the station was completely re-signalled in 1953 and the west side in 1957, employing power-operated two-position colour-light signals with "distant" repeaters below (when the stop signal above is showing red the distant repeater is not lit, but otherwise it shows two greens or two yellows diagonally). The "brains" of the new signalling system is the four-floor signal tower at the eastern end of the station. This impressive structure houses on the top floor the Traffic Controller, or *Fahrdienstleiter,* and, one floor below, the switchman for Hbf. East. The two lower floors contain relay rooms, electrical equipment, toilets, etc. At the west end of the station a more modest building accommodates the Hbf. West switchman, whose equipment is similar to that of his colleague's at the East box, but who does not deal with quite so many movements.

The signalling is operated on the route-setting principle familiar to Britons, but with a difference in the method of absolute control which the Traffic Controller exercises over the movements into and out of the station. He is, in effect, a "master" signalman. His "den" at the top of the East box consists primarily of a large Control Panel displaying a track diagram of the whole area under his control. On this, track circuits are denoted by lights, coloured yellow (free) or red (occupied), which show the movement of trains, and a small panel above each track circuit position on the diagram displays the train number in lights when the track circuit concerned is occupied. The train numbers are set up for incoming traffic by the signalmen on either side of the two Hanover boxes on their train describing equipment, and by the Traffic Controller himself in the case of outgoing traffic.

Before an outgoing train can leave the station, or an incoming train can be accepted by either the East or West switchman, the Controller must originate a routing instruction to the switchman concerned, which he does by depressing two buttons on his diagram, one representing the platform road and the other the running road to be used. This route is repeated automatically on the control panel of the appropriate box as flashing indications covering the track circuits involved and the switchman obeys the instruction by setting up the required route. As soon as he has done so the track circuit lights cease flashing and become continuously lit on both the Controller's and switchman's panels. If the switchman fails to act on the order from the controller within 10 seconds, a bell rings in his box as an additional reminder.

Above the Traffic Controller's track diagram is an illuminated board which shows at a glance the lateness of all arriving trains. The indications on this board are produced remotely by signalmen at various reporting boxes who dial figures that are electrically repeated on the Traffic Controller's board. Another useful piece of equipment, which is still in the proving stage, is a Siemens track occupation recorder. A series of pens, representing platform roads and running roads at both ends of the station, move in a continuous straight line down the paper, the vertical scale of which represents time, and continue to do so as long as the appropriate track circuits are unoccupied. As soon as a given track circuit becomes occupied. its pen moves sideways and then downward, tracing an indent until the circuit is again cleared. The vertical extent of the indented portions thus provides a permanent and accurate record of signal checks on running lines as well as platform occupation. In addition, the instrument records the exact departure time of all trains by means of electric impulses as the first axle of a train passes over the starting signal track circuit. It is hoped that this recorder will eliminate the need for one of the two men at present employed solely to record all movements.

The remaining staff on duty at any one

shift in the top control room consists of the train announcer and the deputy controller. The latter is responsible for communications in general, including two-way radio communication between himself and the five diesel shunters operating in the area. He also attends to all matters concerning special workings, the arrangement of additional stock for strengthening purposes and extra motive power, and is in constant touch with the stationmaster, platform inspectors, motive power foremen and carriage sidings foremen by loudspeaker-telephone.

On the floor below, the task of the East switchman is simplified by the combined efforts of those on the top floor. He operates a conventional control panel, setting up the routes on the controller's instructions, as previously explained, by depressing buttons on the panel. Alternatively, the shunt signals and points can be worked individually, but the running signals cannot be operated independently, except by means of a "danger button" which enables him to set any particular signal to danger in an emergency.

An unusual equivalent of our catchpoints is provided as a safeguard on a number of short stabling sidings in the vicinity of the main station. Steel rail blocks, operated by the switchman, protect the running line and have to be placed across the exit of the siding before the running signals can be cleared; the control of these is interlocked with the signals.

Apart from the two Hbf. boxes (East and West), three other main line boxes are under the control of the *Fahrdienstleiter* — Bismarck-Strasse to the south, controlling the junction of the Hamelin and Goettingen lines; Tiergarten to the east controlling the junctions of the passenger and good lines to Lehrte; and Burg, on the main line to the west, at the junction of the Langenhagen route. All these are manual boxes, operating semaphore signals, but they are equipped with illuminated track diagrams on which trains from the main station are automatically described as they approach; they are to be closed and their functions transferred to the two Hanover boxes at some future date. In addition, a small all-electric box situated at the entrance to the motive power depot controls traffic to, from and within the depot and carriage sidings. Verbal communication between the Controller and these boxes is maintained by loudspeaker-telephone. The whole area is, of course, fully track-circuited and is equipped with standard German A.T.C., which operates at stop as well as at distant signals.

In conclusion, my grateful thanks are due to the Press and Public Relations Officer for the Hanover Area, the Assistant Stationmaster and the official interpreter, all of whom have been most helpful in arranging for me to visit the East Signal Tower and helping me to a greater understanding of the operation of a fascinating signalling system.

British Railways Results in 1958

THE Annual Report and Accounts of the B.T.C. for 1958, now published, show that British Railways suffered a working deficit of £48.1 millions on the year, £20.9 millions greater than in 1957. After interest and other central charges were added to this figure, the total deficit for the year was £90.1 millions. The increased deficit was more than accounted for by the heavy fall in gross receipts, which at £471.6 millions were £29.8 millions less than in the previous year, when additional traffics were carried during the fuel shortage; almost the entire drop in receipts occurred in freight traffics, mainly as the result of the decline in the level of activity in heavy industries. Measured by passenger miles, however, B.R. passenger traffic reached its highest peak in any year since nationalisation except 1957, when carryings were inflated because of the post-Suez fuel restrictions on road traffic. Moreover, the passenger mileage was considerably higher than the average before the war, despite the fact that by the end of 1958 there were over two and a quarter times as many private cars and nearly twice as many buses and coaches on the roads of this country as there were in 1938.

The report notes that the decline in British Railways' carryings of coal and mineral traffics roughly corresponded with the drop in the volume of traffic offering as a result of the recession in industrial activity; thus, although the tonnage of coal and coke moved by British Railways was 8.4 per cent down on the 1957 total, the total market was 7 per cent smaller. Equally relevant to the serious decline of 13 per cent in general merchandise carryings on B.R. was the drop of 12 per cent in the output of finished iron and steel products, which account for about a quarter of the railway's traffic under the heading of general merchandise. B.R. mineral traffic was 19 per cent down on the 1957 tonnage.

But while the volume of goods requiring transport fell, the number and carrying capacity of "C" licensed vehicles suitable for the carriage of goods over medium and long distances continued to rise and by the end of the year had reached three times the number operating in 1938. In fact, road hauliers, who depend particularly on general merchandise traffic for their livelihood, were forced into rate-cutting in an endeavour to keep their share of the market.

First results of the new Regional traffic organisations, says the Report, were "auspicious". Commercial and operating policies which formerly required consideration by the General Manager himself are now co-ordinated often by the Area or Line Traffic Managers and prompt decisions taken. Thus, schemes for the development of new facilities or for the withdrawal of uneconomic services have been formulated and approved in a much shorter time than before, while the Traffic Managers, with their increased authority and closer knowledge of local requirements, are better equipped to provide suitable alternative services for traders or travellers, where this is feasible.

With the elimination of "penetrating lines", the B.T.C. decided to end the common bi-zonal commercial management created in the early days of nationalisation to cover both Western and London Midland lines in the Birmingham and Wolverhampton areas. After taking the advice of outside consultants who had studied the previous organisation, the B.T.C. reverted to the former separate Regional establishments for all purposes, but with a common commercial service at Birmingham, at Wolverhampton and at other important centres. The new District Traffic Officers for each region are eventually to be housed in the same building.

In matters of research, the report states that studies of the performance of the vacuum brake on freight trains were continued and showed that the present design is clearly capable of improvement; three variants in the actual braking system are being tested with different types of buffer and coupling and with a proportion of wagons in the train not fitted with vacuum brakes. An alternative to the hump marshalling yard has been suggested and there is a prospect of a pilot experiment. In testing disc brakes, which offer hope of a substantial reduction in maintenance costs, British Railways encountered certain shortcomings, but the Report hopes that these will be overcome by manufacturers with whom development contracts have been placed. The main subject for operational research has continued to be the study of freight services from the viewpoint of time-keeping, fluctuations in traffic and loading of individual trains. Research on an automatic wagon recording project, whereby each wagon in a passing train would register its number on lineside recording equipment that would transmit the details to a control point, had reached the stage where a pilot investigation and system study would be necessary, and traffic departments were considering whether the considerable expenditure involved in this would be worth while.

The Report confirms that top priority has been given to the 25 kV a.c. electrification throughout between Euston, Birmingham, Liverpool and Manchester, in order to complete it some years ahead of the previous schedule, and that no significant progress, apart from permanent way and bridge work, will be made with the Great Northern main line until the L.M. scheme is well advanced. Both the North Eastern and Western Regions are forecast to have dieselised all their local services by the end of 1960 and the Report hints that the former G.N.S. & Highland systems north of Perth and Aberdeen are to be the first areas of Scotland in which steam will be totally replaced by diesel traction.

The Report confirms our item last month that a decision was taken early this year to employ the Commonwealth-type bogie on locomotive-hauled stock; in addition to improved riding, this type of bogie should show a reduction in maintenance costs. Experiments with other types of bogie will continue — in particular, the search for an improved bogie for use with electric multiple-unit stock is being pursued. The cuts in capital expenditure imposed on the B.T.C. at the end of 1957 fell mainly on locomotive-hauled vehicles in the sphere of coaching stock and for this reason the development of new vehicles based on experience with the prototypes delivered in 1957 has been delayed. But now, says the Report, the carriage fleet will improve rapidly. New locomotive-hauled passenger stock to be built this year will have improved heat and sound insulation, better lighting, more sensible ashtrays, maps, litter baskets in the corridors and, in some cases, double-glazed windows.

NEW DIESEL M.U. SERVICES

WITH the introduction of the L.M.R. summer timetable on June 15, Blackpool received its first regular diesel multiple-unit services. Correspondents write that the local service between Blackpool North and Fleetwood has been dieselised with Metro-Cammell units, and also some workings between Blackpool and Rochdale and Blackpool and Manchester, the last-mentioned including the celebrated 8.10 a.m. Blackpool (North)-Manchester "Club" train. An extension of diesel services between Blackpool and Central Lancashire is expected later this year.

Two-car Cravens diesel units and two of the Bristol-Eastern Coach Works diesel railbuses replaced steam-hauled trains on a number of Lanarkshire services of the Scottish Region on Monday, July 6. The newcomers are based on Hamilton for operation to Coatbridge, Holytown, Motherwell, Blantyre, Strathaven, Lesmahagow and Coalburn. In addition, some steam services from Glasgow Central to the Cathcart Circle, East Kilbride, Uplawmoor, Kirkhill, Hamilton and Lanark have been dieselised.

Motive Power Miscellany

LONDON MIDLAND REGION

Western Line.

Although all the English Electric Type "4" diesels now being delivered to the L.M.R. are officially allocated to Camden (or Willesden until the Camden maintenance facilities are complete), only Nos. D210/1 were based on London at the beginning of July. Others were on loan for crew-training at depots whose men will have to drive them. The Civil Engineer is still extremely apprehensive and we understand that he requires several sets of points on the West Coast Route to be modified before either the English Electric or Derby/Sulzer Type "4" is allowed full freedom of action (why such difficulties should arise on the L.M.R. when the English Electric design has been in full unrestricted employment elsewhere last winter is one of several B.R. dieselisation enigmas). Thus at June's end Nos. D210/1 were still restricted to the Euston-Bletchley section (No. D210's appearance in London on the 10.20 p.m. Glasgow-Euston sleeper on June 30 resulted from a Pacific failure at Bletchley); Nos. D212/4 were at Crewe, with one on E.C.S. crew-training between Whitchurch and Tattenhall Junction, as it is barred from the more usual Crewe-Shrewsbury test stretch, and the other on the 7.45 a.m. Crewe-Euston and 5.25 p.m. back, subject to some special restrictions, including a ban on any deviation from the main lines north of Bletchley; No. D213 was at Carlisle (Upperby), on crew-training to Penrith only; No. D215 was at Edge Hill, making two training trips daily between Liverpool and Crewe; and No. D216 was due to go to Holyhead for crew-training. On July 6 the prototype "Peak" class unit, No. D1, was run light from Derby to Preston for special tests on an obtuse crossing — the variety of track work which is causing trouble with the diesels — near Preston No. 2A box. After this No. D1 was to proceed to Carlisle for, it is believed, a local naming ceremony.

At the end of June the second unit of the "Peak" class, No. D2, was back in Derby works with trouble that necessitated the removal of its main engine/generator set, and, like the Birmingham/Sulzer Type "2s" at Hornsey, both D1 and D2 were to have their pistons changed. Crewe works has completed for the G.E. Line the first of its series of Sulzer-engined Type "2" 1,160 h.p. diesel-electric units, Nos. D5030/1, each of which headed a test train of 15 bogies from Crewe to Penrith and back on June 4 and 25 respectively; on June 17, No. D5030 was observed at Shrewsbury on the 8.40 a.m. from Crewe and the 12.15 p.m. back. Nos. D5015/6, of the Derby batch of this type are now allocated to Crewe diesel depot.

On June 12, "Clan" Pacific No. 72009 (12A) piloted "Jubilee" No. 45742 into London on the 3.50 p.m. from Wolverhampton and spent the weekend in the capital. That morning the Pacific had arrived in the Midlands on the previous night's 8.35 p.m. Stirling-Sutton Coldfield Car-Sleeper which because of increased loading has lately become a Class "6" turn instead an Aston Class "5" working; on June 8, the Car-Sleeper arrived behind "Jubilee" No. 45691 (12A) and on June 9 with No. 45720 (67A), which was serviced on Aston shed and returned home with the 9.35 p.m. Car-Sleeper from Sutton Coldfield to Stirling on June 10. An unusual visitor to Bletchley in the first week of June was "Hall" No. 6942 (81A), which had worked in off the Oxford line. On June 8 the 8.30 p.m. down Postal was double-headed out of Euston by "Royal Scot" No. 46120 and Pacific No. 46252.

On June 7 "K3" 2-6-0 No. 61966 (40B), fresh from overhaul at Doncaster, was used for a special land cruise working, entitled "The Lincolnshire Poacher", from Alford Town to Barmouth; the train travelled via Doncaster, Sheffield (Midland), Chinley and Warrington to Chester, where the "K3" was last seen. Earlier, on May 22, "B1s" Nos. 61161 and 61265 of Gorton headed excursions respectively from Guide Bridge to Llandudno and Ashburys to Rhyl, both via Warrington. A notable sight at Chester (General) on the evening of June 3 was that of two Pacifics leaving for Euston within ten minutes of each other; the engines were Nos. 46239/53, which were returning to London with two specials chartered for the day by the Bowater Group for their shareholders in connection with a visit to paper mills at Ellesmere Port. Another special from the West Riding was worked throughout between Leeds and Chester by Class "5" 4-6-0s Nos. 45075/80 of Farnley Junction. A stranger seen passing through Warrington (L.L.) on May 21 was "B1" No. 61131 (56A) which had been provided from Aintree depot to work a 12.55 p.m. special banana train from Garston to Newcastle (Low Fell). The English Electric type "1" 1,000 h.p. diesels at Crewe, Nos. D8000-4, have all made an appearance at Warrington on the 8.10 a.m. pick-up freight from Crewe since last November, returning with the 10.28 a.m. freight from Warrington; on June 6, one of them was seen in this area on a new duty, when No. D8000 travelled as far as Wigan on the 8.5 a.m. Crewe-Bamfurlong freight, returning light engine to Crewe. Noted on Longsight shed,

Manchester, on June 14 was standard Class "5" 4-6-0 No. 73116 of Nine Elms.

Stanier Class "5" 4-6-0s are now being overhauled at Gorton and at the end of June Nos. 45048 (5B) and 45354 (8B) were receiving attention there; three more of the class were on Gorton shed. The list of names allocated to Manchester-Sheffield electric locomotives Nos. 26046-57 and 27000-6, published in our May issue, is now officially confirmed. All the names, except that of No. 27000 *Electra*, were once carried by M.S. & L.R. steam locomotives built by several firms in the 1840s; *Archimedes*, the name now carried by No. 26046, was the title of the first locomotive built at Gorton works. Trafford Park "Britannia" Pacific No. 70004 was an unusual visitor to Birkenhead shed on June 7; the reason for its arrival was unknown, though the reporting number M956 on its buffer beam may have been a clue, and it was due to leave light engine for Hooton at 8.40 p.m. that evening. Three "J72" 0-6-0 tanks, Nos. 68671 and 68714/27, formerly of Wrexham are now stored at Bidston together with one of Bidston's own shunters, No. 47166.

Midland Line.

New 1,160 h.p. type "2" diesels from Derby works ventured on a fresh duty on June 9 when Nos. D5015/6 had charge of the 8.5 a.m. Birmingham-Newcastle between Derby and York, returning the same day with the 12.48 p.m. Newcastle-Bristol; No. D5015/7 undertook the same duty on June 10-13. "B1" 4-6-0 No. 61056 (41A) passed through Derby with a Hull-Longbridge excursion on June 10. The Midland Line's "Royal Scot" 4-6-0s are being employed more frequently on St. Pancras-Leeds turns; they have been noted on the up and down "Thames-Clyde Expresses", the 12.15, 3.15 and 5.5 p.m. St. Pancras-Bradford, the 12 noon Bradford-St. Pancras and the 9.5 p.m. Glasgow-St. Pancras, as well as their regular booked working on the 9 p.m. St. Pancras-Edinburgh and the next morning's 10.37 a.m. Bradford-St. Pancras. After being seen heading northwards light engine from Leeds towards Carlisle on the afternoon of June 14, Metrovick 1,200 h.p. diesel No. D5708 returned ignominiously three days later, when it passed through Killamarsh towards Derby in tow behind Class "4F" 0-6-0 No. 43902. In mid-June Corkerhill "Jubilee" No. 45687 had a week of varied common user on the Midland line. Between June 17 and 22 it was reported on freight and passenger turns at Leeds, Leicester, Sheffield, York, and on the Bristol main line. Lincoln "A5" 4-6-2 tanks have recently been seen filling in time on the Chilwell Ordnance Depot-Nottingham workman's train.

At most, no more than two Crosti-boilered 2-10-0s were at work by the end of June as Nos. 92020-5 were stored at Wellingborough and No. 92027 at Cricklewood. On June 11 "B1" 4-6-0 No. 61329 (32B) passed through St. Albans towards London with a returning school children's excursion from Whipsnade Zoo. The evening Hendon-Glasgow "Condor" container freight is no longer worked by the same pair of Metrovick diesels that arrives with the up train in the early morning; the down "Condor" is now taken out by the pair which come up on the 10.25 a.m. Manchester-St. Pancras, another pair being turned out to take the 4.25 p.m. St. Pancras-Manchester. The prototype "Peak" class diesel, No. D1, made at least two trips to Cricklewood light engine from Derby in June. A nostalgic sight at St. Pancras on June 20 was that of a compound 4-4-0, No. 41123 (82E), which took out the 3.20 p.m. to Bedford.

On Sunday, August 30, a special train hauled by the restored Midland compound, No. 1000, will leave Birmingham (New Street) at 8.45 a.m. for visits to Doncaster works and shed and York Museum and shed, calling en route at Derby and Sheffield. (Interested readers should write to S.L.S. Rail Tours at 16, Hutton Road, Handsworth, Birmingham, 20 for further particulars). And talking of Midland compounds, we hear that one about to be withdrawn, No. 41101, will be used for a *Daily Mirror* excursion from Manchester (Victoria) to Blackpool on August 3 and will be specially painted at Newton Heath shed, at the newspaper's expense, in *Daily Mirror* colours — which are believed to be yellow and black!

Central Line.

On May 19 "Patriot" 4-6-0 No. 45507 (12B) visited Southport with an excursion from Rowley Regis whilst running in from Crewe works. There is now a regular diesel-multiple-unit working between Manchester and Southport; the trains concerned are the 4.42 (SX) from Manchester and the 8.25 p.m. back from Southport and a traveller by the 4.42 on June 19 found it to be made up of three Metro-Cammell twin-units. Two "B1s" were noted at Bury in June on other than excursion workings; on June 16 No. 61011 (56B) passed through with a goods, returning later light engine, and on June 25 No. 61288 was noted on the 12.42 p.m. Liverpool-Rochdale stopping train and the 3.50 p.m. back.

[For L.M.R. information we are indebted to Messrs. D. Burcham, K. Tingley, A. P. Clewely, K. R. Elms, H. Piltz, A. Heywood, E. H. Baxter, R. Oakley, C. T. Duckitt, K. Leah, D. J. Belson, G. Fell, T. F. Williams, "Control Notes", ?? Carling, P. J. Hobart, B. E. Renard, C. J. Burnley, G. H. Nettleton, J. S. Smith, A. Timperley, J. A. Callander, J. E. Feild, C. W. Woodhead, J. Little, B. Booth, J. S. Marsh, R. C. Bayliss, J. C. Allen, R. J. Winterbourne, R. Grant, B. Price, P. Newell, J. E. Bury, D. A. W. Birkett, J. Round, D. Partington, B. Ogeler, J. Bland, W. G. Ponsonby, P. Trushell and A. S. Woodcock.]

EASTERN REGION

Doubts as to which of the East Coast Route's heavy power would be written off against the forthcoming "Deltics" now appear to have been resolved in favour of the "V2" 2-6-2s and against the "A3" Pacifics, of which a number will be withdrawn as the 3,300 h.p. diesels come into service. The telling factor against the "A3s" is the state of their boilers, now approaching life expiry in several cases, and the unwillingness to construct new ones; the re-equipment with double chimneys will not be effort wasted, as this is comparatively inexpensive modification that very quickly recovers its cost. It may be that a single "V2" will soon be fitted with a double chimney as an experiment, but the change is not expected to have the same remarkable effect on steaming and coal consumption as has been the case with the modified "A3s". The double-chimney "A3s" may soon be fitted with small smoke deflectors on each side of their chimneys to meet enginemen's complaints of drifting exhaust.

At the start of the summer timetable, the Hornsey Type "2" diesels made their debut on the Welwyn Garden City-Dunstable branch. On June 15 Birmingham/Sulzer No. D5314 headed the 5.45 a.m. Dunstable (North)-Kings Cross and the 6.7 p.m. Hatfield-Dunstable; after the latter duty it brought the 8.32 p.m. up from Dunstable (North). No. D5314 had the same work on succeeding days. For the summer services Grantham depot has acquired six more "A3" Pacifics from Doncaster, bringing its stud of this type up to 18; at the end of June only one "A3" on the E.R. remained without with a double chimney.

Two Darnall "B1" 4-6-0s, Nos. 61033 and 61138, have been moved to Millhouses for the summer season. On June 15 No. 61033 had charge of the 4.30 p.m. Sheffield-Rotherham and 5.10 p.m. Rotherham-Manchester (Central); next day No. 61138 was seen on the 7.33 a.m. Sheffield (Midland)-Nottingham and on June 17 it headed the 6.4 a.m. Sheffield-Derby, while No. 61033 was on Sheffield (Midland)-Manchester trains via the Hope Valley on June 16, 17 and 19. No. 61138 also appeared in the Hope Valley on June 20 and 22 and on June 23 No. 61002 headed the 4.3 p.m. Sheffield-Manchester.

On June 5 "B17" 4-6-0 No. 61661 was provided to work an excursion throughout from Purfleet to Windsor & Eton Riverside, S.R., and back. The special travelled via Forest Gate Junction, Victoria Park, Willesden (H.L.), Acton and Staines Central. After its arrival back in Tilbury that evening the "B17" returned to London on a freight.

A 2-10-0 re-appeared on the G.E. Line on June 2 when No. 92194 (36A) was recorded at Waltham Cross in charge of a down evening haul of empties. Brush Type "2" diesel No. D5511 headed an excursion from Bishops Stortford to Southend over the Braintree branch on June 7. Noted at Ely on June 12 was Class "4F" 0-6-0 No. 44082 (41D), heading a special freight from Peterborough, to which it returned light engine.

[For E.R. information we are indebted to Messrs. D. R. Bunney, G. Dawes, T. Pinyoun, C. W. Woodhead, R. B. Arthur, J. C. Newman, F. R. Hicks, R. James, T. Pearman. A. Lockwood, R. D. Bunyan, P. C. Thaiss, R. Aldridge, I. C. S. Rutter, G. Tweedie, F. E. Close, D. J. Sudlow and P. Moss.]

NORTH EASTERN REGION

One of the very rare Pacific workings into Hull since the dieselisation of the passenger service to Leeds in January occurred on June 16 when Heaton "A3" No. 60040 was turned out for the 7.30 a.m. Hull-Skelton New Sidings freight, usually worked by a York "V2" or "B16"; next day the freight was headed by March "V2" No. 60803 and on June 18 by another Heaton engine, "V2" No. 60964. The Hull district has just been allocated its first B.R. standard tank, Class "2" 2-6-2 No. 84009, formerly of Royston depot, which a correspondent thinks may be used on the daily Isle of Axholme Light Railway train covered by Goole depot. In addition to the "K3" working described in the June notes, Goole depot has been responsible since the beginning of the summer timetable for another ex-L.N.E. engine working on the 5 p.m. Goole-Hunslet freight (now reclassified "D"), employing a "B1" 4-6-0 borrowed for the week from Dairycoates depot but returned there for weekend excursions.

An unusual sight on Holbeck shed, Leeds, on June 3 was an "A3" 4-6-2, No. 60066 (34A); the Pacific had come down light from Leeds Central and after a pause at Holbeck made its way to Neville Hill depot. Polmadie "Britannia" No. 70051 brought the 9 a.m. Liverpool-Newcastle into Leeds on June 4, returning west on the 9.55 a.m. Newcastle-Liverpool; as usual the latter had as pilot the engine returning from the night Crewe-York duty, which on this occasion was "Royal Scot" No. 46112. In the last week of May two engines from W.R. depots were noted in the Calder Valley; on May 23 Stanier 2-8-0 No. 48768 passed Brighouse with an up goods and on May 28 No. 48434 (82B), fresh from overhaul at Horwich, headed a freight from Crigglestone to Mytholmroyd. A correspondent has supplied details of the roster that takes the two "B1" 4-6-0s recently allocated to Mirfield to Crewe; it begins with the 12.45 a.m. Healey Mills-York goods, after which the "B1" heads a Class "C" freight from York to Crewe, then proceeds to Stockport (Edgeley) for servicing before regaining its home depot on the 11.3 p.m. Stockport-Mirfield parcels. Thornaby depot now has

a regular working to Mirfield which during June produced "WD" 2-8-0s and also a "K1" 2-6-0, No. 62065.

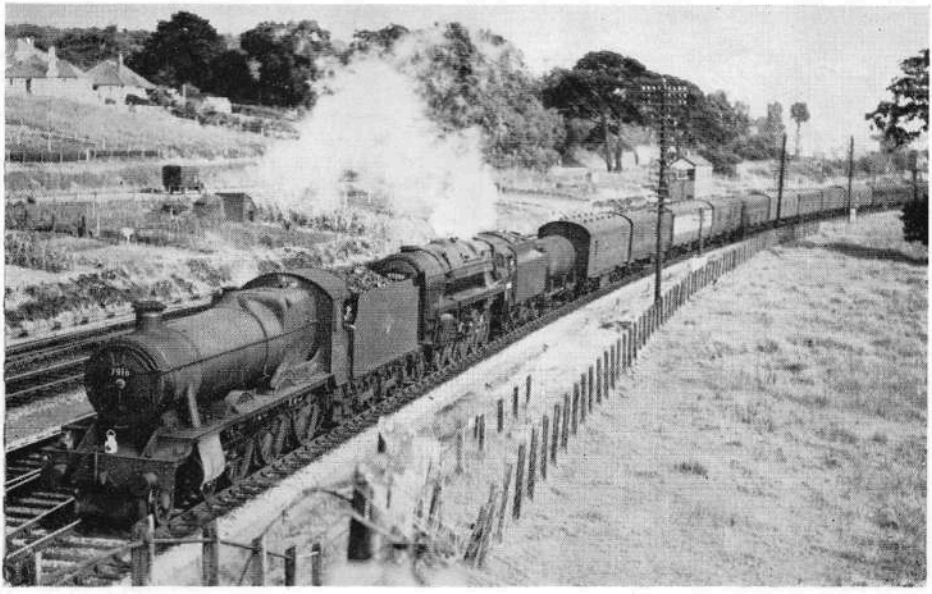
At Darlington construction of the batch of Sulzer-engined Type "2" 1,160 h.p. diesels beginning with No. D5094 has commenced. An unusual combination noted on the five-coach 4.52 p.m. York-Doncaster local on June 26 was that of "B16" 4-6-0 No. 61439 and "A1" Pacific No. 60119.

Extensive transfers of motive power prefaced the summer timetables in the N.E.R. and full details appear on another page. The more interesting moves include those of standard Class "5" 4-6-0s Nos. 73167-70 away from Scarborough, Ivatt Class "4" 2-6-0s Nos. 43099 and 43100 to Copley Hill, "K1" 2-6-0s Nos. 62005/9 to Ardsley, and 62047/65 to Low Moor.

[For N.E.R. information we are indebted to Messrs. E. Rumley, M. Hogg, B. A. Wedgwood, R. Grant, C. Garrett, "42414", P. Davies, H. M. Wilson, G. Holcroft, R. M. Schofield, A. S. Woodcock, I. W. Mitchell, J. R. Buckle, M. Fitzgerald, P. F. Wickenden, "61457", G. Oliver, "61652" and M. Veal.]

WESTERN REGION

A "Royal Scot" travelled to Weston-super-Mare on June 6, when No. 46114 (8A) was turned out for an excursion from Coventry to this West Country resort; the stock, roofboarded "London-Rugby", appears to have been the set normally used on the 10.45 a.m. Bletchley-Euston and 5.10 p.m. Euston-Rugby. Two more Class "7" 4-6-0s made for the west on June 19. Rebuilt "Patriot" No. 45528 (5A) headed the 13-coach 8.18 a.m. Birmingham (New Street)-Bristol schools educational excursion and the passengers rejoined the train at Weston-super-Mare, to which No. 45528 worked its empty stock for the start of the return journey to Kenilworth; however, No. 45528 failed at Gloucester and was still on shed there at June's end. The other was No. 45531 (8A) on a pigeon special. An unmodified "Patriot" visitor recorded at Cheltenham on June 13 was No. 45515 (8A), in charge of the 7.36 a.m. Sunderland-Bristol. Barrow Road's "Patriots" seem to have gained more confidence from their handlers, for in the first week of June No. 45519 was seen on the two-day diagram to York with the 10.30 a.m. Bristol-Newcastle and 12.48 p.m. York-Bristol, while No. 45504 headed the 10.30 a.m. out of Bristol on June 6; No. 45506, which had been stored since March, emerged to work the 4.20 p.m. Bristol-Gloucester on June 12. A "B1" again made a weekday appearance on the 12.48 p.m. from York, No. 61288 arriving in Bristol on June 10 and staying at Barrow Road for at least four days. On June 27 "B1" No. 61164 (40A) headed the 9.8 a.m. from Birmingham to Bath (Green Park). On June 5 "Patriot" No. 45537 (12B) brought a pigeon special from Stirling into Worcester and "Jubilee" No. 45596 (12B) worked a similar train from Glasgow into Cheltenham, both travelling via Market Drayton, Wolverhampton (L.L.) and Stourbridge Junction.



W.R. "Hall" 4-6-0 No. 7916 "Mobberley Hall" pilots 2-10-0 No. 92006 over the South Devon banks and into Newton Abbot with the 4.35 p.m. Plymouth (Millbay) - Paddington parcels on June 24, 1959. [C. H. S. Owen

Leicester shed now supplies the power for the 8.22 a.m. Redditch-Ashchurch and 10.10 a.m. Ashchurch-Birmingham instead of Saltley and the former's Class "4" 4-6-0s have been frequently used.

Correspondents suggest that the remaining Class "9" 2-10-0s under construction at Swindon are all for allocation to St. Philips Marsh depot, Bristol, where Nos. 92203-6 are already in residence. Further "Castles" with double chimneys are reported by correspondents to be Nos. 5031/71, 7008/15; the only "County" still without one is No. 1021. In mid-June the latest "Warship" diesel-hydraulic to be finished at Swindon was No. D807 *Caradoc*.

In its first week of diesel haulage the accelerated "Bristolian" was 2-7½ min. early into Bristol each day; it was being worked exclusively by Swindon-built "Warships". The engine of the down train comes up from Plymouth to Paddington on the night Postal, then returns to London from the "Bristolian" run on the 11.45 a.m. two-hour train from Bristol and regains Laira on the 4.15 p.m. Paddington-Bristol-Plymouth. On Saturdays the diesel off the up "Postal" works the 7.30 a.m. Paddington-Paignton as far as Bristol, then the remainder of the Mondays-Fridays diagram. The other "Bristolian" diagram is reported to comprise the 11.8 a.m. Plymouth-Bristol, 4.30 p.m. Bristol-Paddington, 11.50 p.m. Paddington-Bristol and 6.25 a.m. Bristol-Plymouth.

"Britannias" had some unusual chores in June. On June 3 No. 70025 headed the 6.35 p.m. Paddington-Cheltenham, on June 6 No. 70019 powered the 6 p.m. Paddington-Weymouth and on June 4 and 6 Nos. 70016/25 respectively worked the 10.5 a.m. Paddington-Weston-super-Mare. On three occasions within a fortnight Pacifics were seen paired; on May 29 Nos. 70022/9 double-headed the down "Red Dragon", as the 5.50 down was cancelled, and on June 3 and 10 the 1.55 p.m. Paddington-South Wales was respectively in the charge of Nos. 70026/8 and 70024/6. A "Britannia" also double-headed the "Castle" on the 11.55 a.m. Paddington-West Wales on June 8, 9 and 11. English Electric Type "4" diesel-electric No. D201 travelled through from Retford to Windsor, taking the High Wycombe-Maidenhead branch, with a Northern Rubber Co. excursion on June 6; the same day a "B1" 4-6-0, No. 61265, on another Windsor excursion visited Paddington *(see page 395)*, as the Leicester party carried by the train were also having time in London before returning home in the early hours. Two "Manors", Nos. 7805/21, were on Southall shed on June 5. On June 24 a Stewarts Lane "N" Class 2-6-0, No. 31410, ran light from Reading to Moreton yard, Didcot, to pick up freight for the S.R.

Laira depot has acquired 2-10-0s Nos. 92208/21-5 and No. 92225 was seen on the 5.35 p.m. Kingswear-Exeter local on June 27; on the previous Saturday an unidentified 2-10-0 took over a Newquay-Paddington train at Plymouth. St. Philips Marsh now provides the engine for the 4.35 p.m. Millbay-Paddington parcels and frequently uses one of its 2-10-0s on the job *(see page 393)*. For the summer service additional "Manor" 4-6-0s have been drafted to the West Country; Nos. 7806/8/12/8/21 have been noted, but it is not clear which are at Newton Abbot and which at Laira. Other new arrivals at Newton Abbot are 2-6-2 tanks Nos. 6119/66. Since the summer timetables began S.R. interchange workings over the W.R. route between Exeter and Plymouth have been resumed with the usual light Pacifics, but on June 12 "N" Class 2-6-0 No. 31839 passed light over Dainton towards Plymouth. On June 26 S.R. Pacific No. 34033 worked to Totnes, piloted from Newton Abbot by a 2-6-2 tank, with an excursion from Torrington; the party went by water to Kingswear, where the empty stock was taken by "King" No. 6016, and this engine returned the train as far as Paignton, giving place there to No. 34033 (and a bunker-first 2-6-2 tank as pilot to Newton Abbot).

On June 6 a Stanier Class "5" worked through to Cardiff when No. 45190 (84G) appeared on the 5.30 a.m. from Crewe; it returned eastward on the 5.15 p.m. Cardiff-Crewe. The through working to Neyland of Bath Road "Castles" on the 5.48 p.m. milk empties from Canton and the 3.50 p.m. Milford Haven fish back described last month was short-lived and a Cardiff Canton "Castle" is now employed. Instead, Bath Road has regained jobs to and from Salisbury on the 12.50 p.m. (SX) — formerly the star "Hall" turn of Canton, which now has it on Saturdays only — and 4.25 p.m. from Cardiff, the 9.33 a.m. and 5.45 p.m. from Portsmouth, the 11 a.m. from Brighton and the 5.35 p.m. (SX) from Salisbury. A new diagram takes a Canton engine through to Chester on the 12.38 p.m. (SO) Cardiff-Manchester (Exchange), with return on the 9.55 p.m. Saltney-Pengam freight. Shrewsbury depot has a new duty to Cardiff covering the 5.40 a.m. Shrewsbury (2 a.m. ex-Stockport)-Bristol parcels, 2.38 p.m. Bristol (7.55 a.m. ex-Penzance)-Swansea as far as Cardiff and the 9.48 p.m. Cardiff-Shrewsbury parcels. Laira 2-10-0 No. 92224 worked through to Swansea on June 20 with the 10.20 a.m. from Penzance, which, with the 12.42 p.m. Newquay-Cardiff, the Plymouth depot powers through to Wales. A Penzance "Grange" is still rostered through to Cardiff on Saturdays with the 6.35 a.m. from Taunton, returning with the 11.20 a.m. from Bristol.

Chester (West) depot, having spurned "Jubilees", now has a Stanier Class "5",

Above : W.R. 2-8-0 No. 2821 of Landore, which had worked the previous night's through freight from Washwood Heath, Birmingham, to Southampton instead of the usual Tyseley 2-6-0, had another unaccustomed duty when it worked the 5.20 p.m. Eastleigh - Southampton Terminus on May 7, 1959. The engine of the freight travels light to Eastleigh, then returns to Southampton for the balancing up freight on this local.

[C. P. Boocock

NEWSREEL

Right: Class "B1" 4-6-0 No. 61161 in an unusual setting at Paddington on June 14, 1959, prior to working a day excursion from Leicester onwards to Windsor (see page 394).

[I. S. Carr

Right : An excursion returning from Weston-super-Mare to Coventry on June 7, 1959, enters Bristol (Temple Meads) behind class "7" 4-6-0 No. 46114 "Coldstream Guardsman" (see page 393).

[R. Bullock

No. 45237, which was noted on the 8.5 a.m. Birkenhead-Paddington on June 21. Shrewsbury's latest acquisition is Worcester's formerly prized "Castle", No. 5029, which was being employed on the through Newton Abbot working in June. Working in the Wellington area in the first week of June was Ivatt Class "2" 2-6-0 No. 46509 (89A), which on June 3 and 4 headed the one-coach 8 a.m. Market Drayton-Wellington and 12.50 p.m. back, then the 2.40 p.m. Market Drayton-Wellington Class 'K".

[For W.R. information we are indebted to Messrs.D. T. J. Rollason, R. Williams, R. Bullock, "4093", W. T. Bagnall, R. Baggott, "46200", J. Davies, "4911", G. J. Lusher, R. Phipper, K. J. J. Molyneux, R. E. Warriner "2006", R. M. Grainger, K. E. Skinner, C. H. S. Owen, P. R. Maydon, D. Kruger, W. Robins, B. A. Penn, L. Harper, K. Porton, J. Illsley, G. Roose, M. F. J. Arscott, A. Miller, J. V. Woodward, D. J. Malcolmson, M. G. James, J. Hodgen, J. Godfrey, B. J. Yearsley, J. Baldwin, E. Goater and N. Preedy.]

SOUTHERN REGION

Western Section

The official list of transfers sweeping the newly electrified Kentish lines clear of steam power credits Nine Elms with a huge fleet of unaccustomed types, including "D1", "E1", "L", and "L1" 4-4-0s, "C" and "O1" 0-6-0s and "H" 0-4-4 tanks. The full details are included in the locomotive stock changes on another page. However, by June 21 only a handful of Eastern section locomotives were visible at Nine Elms, a visitor noting "D1" 4-4-0s Nos. 31246, 31494, 31545 and 31727/35, "L1" 4-4-0s Nos. 31786/8/9, Class "H" 0-4-4 tank No. 31552 and "Schools" 4-4-0s Nos. 30911/2/6. No. 31735 was seen heading empty stock through Wimbledon on June 20 and No. 31788 was employed on empty stock duties at Clapham Junction on the morning of June 20. The "H" 0-4-4 tank, No. 31552, also was engaged in Clapham Junction yard on June 19 and that evening ran light down the main line to cover the up vans train from Walton. A "Schools" officially transferred back to the Eastern section from Basingstoke, No. 30923, was one of several engaged in Bournemouth line traffic during the first week of the summer service; on June 19 No. 30911 worked through to Weymouth with the 10.30 a.m. from Waterloo and No. 30923 on the 11.22 a.m. from Waterloo. At the end June a number of ex-Eastern Section engines were stored at Feltham, Guildford and Basingstoke.

Bournemouth depot has lately acquired from the Eastern section four standard Class "4" 4-6-0s, Nos 75065-9, and is using them on former "N15" turns to Weymouth. Another new "Schools" *habitué* of Bournemouth is No. 30915, formerly the engine used by Stewarts Lane for Royal workings; newly transferred with No. 30914 to Brighton, it is used on the Brighton-Bournemouth through train.

The fate of the redundant Kent Coast steam locomotives, particularly the 4-4-0s and 2-6-0s, is uncertain as there seems little work for them elsewhere — indeed, there seems a likelihood that withdrawal of the "Schools" 4-4-0s will commence after this summer's service, as the L.M.R. is now confident enough of its diesel programme not to want any for piloting on the Midland line, a use previously proposed for redundant "Schools". Another project in doubt is the rebuilding of 35 of the remaining Bulleid light Pacifics. This may have a connection with the recent rejection by the L.M.R. even of an S.R. offer of modified Bulleid Pacifics — the engines which Euston made such great efforts to secure prior to its placing of bulk main line diesel orders !

Weymouth was visited by one of the Laira 2-10-0s, No. 92223, on June 19. With the introduction of Bristol-Weymouth diesel multiple-unit services at the beginning of the summer service, Bridport locomotive depot was closed down; the sole surviving steam services on the branch are the week-day 7.30 a.m. and Saturday 11 a.m. from Bridport. On the first day of the summer service no S. & D. 2-8-0s were noted on passenger workings, but an interesting development was the use of the rebuilt Bulleid Pacific, No. 34039, on the northbound "Pines Express"; No. 34039 was engaged on the S. & D. line several times in the following week. At Eastleigh works a second standard Class "5" 4-6-0 has received a former "N15" name, No. 73119 becoming *Elaine*. A Cravens three-car diesel multiple-unit from the L.M.R. — and believed to be based on Longsight, Manchester — Nos. M50752/89 and M59312, passed through Eastleigh towards Southampton on June 28, presumably forming a day excursion.

An occurrence without precedent, we believe, was the appearance of a "Lord Nelson" 4-6-0 at St. David's station, Exeter, on June 16; No. 30850 was working a British Legion special from Southampton to Newton Abbot and was changed at St. Davids for "Hall" No. 5959. Three more "Z" 0-8-0 tanks, two of them displaced from Ashford by electrification, are officially transferred to Exmouth Junction, where four of the class were in store a few weeks earlier; perhaps the prophesied use of these engines as bankers between St. Davids and Central stations will soon be fulfilled. The application of A.T.C. apparatus to the track between Basingstoke and Exeter, and Southampton proceeds, as does the fitting of selected classes of S.R. steam locomotives; at present the track fittings are not being extended east of Basingstoke as the proximity of the electrified third rail is causing some unfortunate effects on the locomotive's receivers that have not yet been overcome.

The 7.52 p.m. arrival at Waterloo from Salisbury on June 30 produced a pair of "Schools", Nos. 30912/6. On May 30 the Chessington branch was visited by light Pacific No. 34065, which worked a 6.51 a.m. special from Chessington South to one of the Channel Ports. An unusual cavalcade travelled the Redhill-Reading line on May 31, when rebuilt "West Country" Pacific No. 34021, running tender-first, left Redhill in mid-morning towing "N15" No. 30797 and Pacific No. 34082, both of Dover shed, to Eastleigh works via Guildford.

Central Section.

Two of the transferred W.R. 0-6-0 pannier tanks were noted on the Brighton main line on June 11; on the evening of that day Nos. 4634/72 returned to London after attention at Ashford works via Tonbridge and Redhill. Since the beginning of the summer services the 3.15 p.m. (3.5, SO) Margate-London Bridge via Redhill has been worked by a Bulleid light Pacific instead of the usual "Schools" 4-4-0; Nos. 34100/3 have been noted on this duty. An "L1" 4-4-0 was a rare sight on the Central section main line on June 20, when No. 31754, officially transferred from Dover to Nine Elms after the Kent electrification, passed through Purley at the head of an up special parcels.

South Eastern Division

The change-over from steam to electric traction on the Kent coast was carried through with great efficiency on the night of June 14/15 and there was scarcely a trace of steam on the transformed line when the summer services began. The only participants that seemed to have failed to match the occasion were the 2,500 h.p. electric locomotives, a number of which were seen out of service in unexpected places during the next few days. Not all the inter-Regional trains are being worked by the Derby-Sulzer Type "2" diesels; the through train from Birkenhead to Margate still arrives on the Kent coast behind steam, although the return service is dealt with by one of the Type "2" units, which later returns light to Ramsgate and works an evening freight to London. On June 27 it was noted also that the 10.10 a.m. Birmingham (Moor Street)-Margate via Ramsgate was not diesel-worked, but had an "N" 2-6-0, No. 31401. On the latter date, however, a 12-coach excursion from High Wycombe to Margate arrived behind diesels Nos. D5001/9; on the same day Nos. D5013/4 were recorded at Orpington on a down "Poly-Tours" boat train. One or two 10-coach multiple-unit formations, consisting of two "4-CEP" and one "2-HAP" units were seen running between Victoria and the Kent coast on the first Saturdays of the summer service; a more curious combination noted on June 20 comprised a "4-EPB", a "2-EPB" and two "2-HAP" units, while on this day an excursion of five "2-HAL" units was noted at Bromley. At the beginning of July both the two independent electric baggage cars, Nos. S68001/2, were running coupled to the 10.0 a.m. Victoria-Dover Marine multiple-unit boat train and the 2.25 p.m. back, making a 14-coach formation on each working. By this date the increasing summer traffic and the shortage of electric locomotives was making it necessary to run occasional steam-hauled as well as diesel-hauled relief boat trains via Chatham at weekends.

Before the Ramsgate electrification was inaugurated steam visitors to the Kent coast included Class "5" 4-6-0s Nos. 44915 and 44810 (2A) on June 7 and 14 respectively, while on June 2 "B1" No. 61372 travelled through to Margate with a day excursion from Leicester; an eight-coach excursion of Metro-Cammell diesel multiple-units arrived on the Kent coast on June 21. One of Folkestone Junction's W.R. pannier tanks, No. 4631, was noted on Deal-Minster local passenger services in mid-June.

[For S.R. information we are indebted to Messrs. D. P. Clegg, J. A. E. Beamish-Cook, F. C. B. Clarke, G. K. Dawe, D. J. H. Senior, K. C. Sewell, B. R. Gill, M. J. Baggs, D. Walden, K. G. Churchill, D. B. Ellery, E. J. Gliddon, D. Wood, J. C. Love, R. Ashley-Carter, J. B. D. Lovell, D. F. Howells, C. R. Packham, S. N. Dray, J. C. Russell, G. Langley, R. A. Lanchester, A. J. R. Allen, K. Gunner, J. Clifford, D. J. Holmes, C. Robinson, T. G. Bairley, P. R. Crayford, I. W. Warburton and D. K. Gardiner.]

SCOTTISH REGION

The English Electric "Deltic" diesel arrived at Carlisle early in June for a week's Scottish trials and travelled over the Waverley route on June 8 en route to Leith Central. Next day it worked a test train from Edinburgh to Berwick and back and is believed to have had a trial on the Edinburgh-Aberdeen route before it returned to Hornsey, E.R., via the West Coast Route the following weekend. The latest Birmingham/Sulzer Type "2" diesel arrival reported by readers in June was No. D5325, seen at Dundee on June 13; after June 15 these units were working through to Aberdeen from Edinburgh and returning with the 10.25 p.m. Aberdeen (Guild Street)-Carlisle (Upperby) and 12.20 a.m. Aberdeen (Guild Street)-Heaton fast freights.

On June 12 Eastfield Class "4" 2-6-0 No. 76074 and "B1" No. 61197 worked to Wemyss Bay with a 12-coach special; the visitors were serviced at Greenock (Ladyburn). A diesel-steam combination was noted on the up "Condor" freight on July 25 when it passed Motherwell about 45 min. late with Metrovick Co-Bo No. D5706 piloting Class "5" No. 73058. A possibly unique sight on the Cathcart Circle on June 12 was a "J50" 0-6-0 tank, No. 68958, at

the head of a goods. A reader reports that the restored Scottish "relics", the ex-G.N.S. 4-4-0, ex-N.B. "Glen" 4-4-0 and ex-Caledonian 4-2-2, are all to be stationed at Dawsholm. On June 27 "Patriot" No. 45517 (27A) was supplied by Polmadie to work an excursion to Ayr from Grangemouth, where the type is not thought to have been seen before.

The Crieff-Gleneagles service is now being operated by Wickham instead of A.C. Cars diesel railbuses. The latest Wickham arrival, No. SC79968, is fitted with the C.A.V. automatic gear-change; a dashboard device enables the driver to select automatic or manual control of his gears.

During the first week of the summer service, the 5.17 p.m. Aberdeen-Edinburgh (Waverley) was hauled on three occasions by a Newcastle "V2" and once by a Carlisle (Canal) "A3"; on June 16 "V2" No. 60929 was on this train, on June 17 and 18 "V2" No. 60940 was the power provided and on June 20 "A3" No. 60093. Normally a Haymarket Pacific is rostered.

[For Scottish information we are indebted to Messrs. I. McGregor, R. Paton, L. Harper, R. Webster, A. Morrison, G. W. Beveridge, D. Gledhill, "Sou'-West", R. Archibald, M. B. Smith, J. Sneddon and K. Edgar.]

Locomotive Stock Changes

"N.Y.A." denotes "not yet allocated" (on official lists received). This list is correct to the following dates: L.M.R.—May 16th, 1959; E.R.—June 20th, 1959; N.E.R.—June 20th, 1959; Sc.R.—June 6th, 1959; S. R.—June 14th, 1959; W.R.—May 16th, 1959.

NEW ENGINES

2,000 h.p. Diesel-electric 1Co-Co1 D210-1A; **2,200 h.p. Diesel-hydraulic B-B:** D804 **Avenger,** D805 **Benbow,** 83D; **204 h.p. Diesel-mechanical 0-6-0:** D2059/60/1-52A; **350-400 h.p. Diesel-electric 0-6-0:** D3702/3-41A; D3704/5/6-34B; D3738/9/40/1-64C; D3764-6A; D3765/6/7/8-9A; D3823/4-86B; D3825/6-87C; D3827/8/9-N.Y.A.; **1,160 h.p. Diesel-electric Bo-Bo:** D5014-5B; D5030-31B; **1,160 h.p. Diesel-electric Bo-Bo:** D5325/6/7-64B; **1,365 h.p. Diesel-electric A1A-A1A:** D5532/3/5-32A; D5534-31B; D5536-30A; **1,200 h.p. Diesel-electric Co-Bo:** D5716-17A; **1,100 h.p. Diesel-electric Bo-Bo:** D5908/9-34B; **1,000 h.p. Diesel-electric Bo-Bo:** D6113/4/5/6/7-30A; **1,000 h.p. Diesel-hydraulic B-B:** D6303-N.Y.A.; **Class "9F" 2-10-0** 92204/5/6-82B; **2,500 h.p. Electric Bo-Bo:** E5005/6-73A.

ENGINES WITHDRAWN

5734, 7411, 7735, 30026, 30256, 30310/35, 30481/2/4, 30706/24/78/97, 31295, 31430, 31554, 31781, 40412/6, 40536/8/90, 40606, 41062, 41661, 41878, 43253, 43355, 43506, 47214/26, 47329, 47538, 48922, 49509/11/78/82/92, 49640/62/7, 51458/97, 56038, 56252, 56352/9/65, 57241, 57419, 58119/30/2/78, 58204/81, 60700, 61614, 61758, 62436, 63699, 63756/61, 64246, 64536, 64752/85/7, 65783/5/98, 65866, 67448, 68263, 68334, 68824, 68967, 69222, 69361, 69532/6/47, 69626/57, L.M. Service Loco. C.D.6.

ENGINES REALLOCATED

London Midland Region: W/E 25/4: D2508-17A, D5008-5B; D5013-S.R.; 44295-17B; 44409-14B; 45530, 46122-9E 46158-14B; 48120-2A; 64359, 64439-9G.

W/E 2/5: 40652-W.R.; 41206-27A; 42050-9E; 42054-16A; 43763-15C; 45017/9-8F; 45327-3D; 47392-24K; 49674-26B; 64256-9G; 75042-15C; 84013-26C; 92081-18A; 92094-16D.

W/E 9/5: D5008-18A; D5014-17A; 40122-5C; 42146-17A; 44078, 44138-9E; 44154-18B; 44275-9G; 44747-9A; 46154-14B; 47412-8A; 48695-9F; 58135, 58271-3E; 58171-2A.

W/E 16/5: D5014-S.R.; 43052, 43103/22-21A; 43073-9F; 44413-9E.

Eastern Region: W/E 30/5: D2555-32D; 61083-41F; 61111/2, 61249-41A; 61119, 61233-30F.

W/E 6/6: 64655-31B.

W/E 13/6: D5500/4-31B; 61530/3-31A; 62661-41H.

W/E 20/6: D200/2/3/4/5-32A; D2029-34D; D5500-32A; D5524/8-31B; 48037, 48178-41B; 60046/64/7, 60102/4/12-34F; 60513/20/33-34E; 60875, 60908/12-34F, 61090/3-41F; 61139-41A; 61119, 61233-30A; 61370-41A; 61664-32A; 61672-32C; 61251, 61367-34F; 61836/9/50/67/8-36A; 62070-30A; 63957/63-34F; 64673-31C; 64678/9-30F; 67710-32C; 67741/90-40E; 67791-34F; 68566-31C; 69505/60/1-34F; 69513/40/71/82-34E; 90051, 90162, 90411-41D; 90052/64, 90519-41F; 92184-34E; 92198-36A.

North Eastern Region: W/E 30/5: Nil.

W/E 6/6: Nil.

W/E 13/6: 43075, 43101-56A; 60053/8-52A; 60070/91-51A.

W/E 20/6: D2046-50A; D2245-50C; D3324, D3455-52A; D3456-51A; 40148-55D; 41252/81/2-50B; 41274, 42311/80-56F; 42477, 42553, 42639-50A; 42774/95, 42866-55C; 43053-56F; 43099, 43100-56C; 46478-51L; 47266, 47443, 47632-56D; 60837/64/77, 60939-56C; 60946/60-51A; 61010/80-53A; 61014-52A; 61018/21/4/30/2/4/7, 61173, 61220/55, 61303-51L; 61068-50E; 61198, 61274, 61387-56F; 61215/89, 61306-53A; 61229/73/6/91, 61319, 61433/56/8/9/78-50A; 61238-52A; 61304/5-50E; 62001/3/41/2-51L; 62005/9-56B; 62047/65-56F; 62060-50A; 62701/7/10/7/20/2/3/60-53A; 62740/65/70-50C; 63341/3/4/7/61/7/74/82, 63416/32/50/1-51L; 63342/6-52K; 63350/4/8-52H; 63366/77/84/6, 63400/2/8/31/4/44/56/8-52C; 63395, 63423-51A; 63407/43/6-51F; 63463-52G; 64700/7/10/3, 64812/4/46/51/4, 64921/36-52A; 64796-56B; 64818/47, 64938-50C; 65702/12/28-52A; 65747/73/87/8, 65853/84-51L; 65847/93-52F; 65823-52G; 67635/8/40/63/77/82/4/6-53A; 67645/73-52B; 67754/66-51L; 68032/40-51A; 68049/60/78-51L; 68316-51C; 68363-53A; 68694/5/7, 68705/28/30/7-52A; 68696-51L; 68892, 68941-50C; 68897/8, 68909-56A; 69017-52A; 73167-55E; 73168/9/70-55A; 76024-52A; 77001, 84009-53A; 90011/57/82, 90155/72/84, 90233, 90377, 90430-51A; 90086, 90397, 90479-51L; 90243, 90336-55D; 90281, 90300/22/51, 90664/56D; 90467, 90663-50A; 90649/66-55G.

Scottish Region: 4 weeks ending 6/6: D3206-66B; D3283/5, D3382-66C; D3735-60E; 40607/26-67B; 55269-60A; 56372-67D.

Southern Region: period ending 14th June: D3670/1, D3719/20/1-73E; D5014-73C; 30031-70B; 30033-72E; 30052/3/5/6, 30109/10-71A; 30338-72A; 30375-72E; 30377-70F; 30378-70C; 30522/3/4-72B; 30718/9-72A; 30732/67/8/9, 30800/2/3/4/5/6-71A; 30775/7/93/5-70B; 30796/8/9-72B; 30908-70D; 30909/10/1/2/3/6/7/8/9-70A; 30914/5-75A; 30920/1/2/3-73A; 30932/3/4/5/6/7-73F; 30938/9-73H; 30951/2/4-72A; 31004/10/9/33/7/47/8/54/61/7, 31107/12/28/45/74, 31227/9/42/5/6/7/52/66/8/71/97/8, 31324/6/37/70, 31481/94/5/7, 31500/3/5/7/9/10/45/52/3/76/9/92, 31682/3/4, 31720/7/35/53/4/5/6/7/8/9/60/2/3/4/5/6/8/70/1/3/5/6/7/8/9/80/2/3/4/5/6/7/8/9-70A; 31161-75E; 31255/6-73F; 31269/76/9, 31308-75A; 31319/22-73J; 31408/9-73F; 31413/4-73H; 31512/8/9/20-73J; 31522-75E; 31530/43/8-75A; 31614-70F; 31615-70C; 31632-71A; 31714/5, 31896/9, 31900-73A; 31743/9-73B; 31790/1-72C; 31810-73H; 31811/2/5/6-70C; 31822/76/7/8/9/80, 31901/2/3/4/5/6/7-73J; 31850/1/2/3/60-72A; 31861/70/1/2-75B; 31890/1-75A; 31892/3-70B; 33001/2/3/4/14/37/9/40-73J; 34016/7/21/2/5/6/7/37/78-73B; 34029/47-71B; 34064/5, 34107-72A; 35001/15/28-

70A ; 41308/9/10/1/2/3-73F ; 73041/2/80/1/2/3/4/5/6-70A ; 75065/6/7/8/9/71B ; 76059/60-72B ; 76061/2/71A ; 84025/6/7/8/9-73F.

Western Region : 4 weeks ending 16/5 : 1447-89A ; 2271-87H ; 2821/44-81E ; 3727-88C ; 3849-86C ; 4077-83A ; 4286-87F ; 4629-85D ; 4952-86C ; 5029-83A ; 5311-82B ; 5339-86E ; 5351-84C ; 5396-85A ; 5904/35-82D ; 5936, 6122-81D ; 6363-82B ; 6859-81F ; 6951-82D ; 6972-82A; 6975-84B ; 7719-85C ; 8421-85B ; 8451-81C ; 8491-85B ; 8710-86F ; 8737-82B ; 8761/9-81C ; 8780-88A ; 9469-81A ; D3605-88B ; 40652, 41296-82G ; 41304-82E ; 82030-85A. Diesel Railcars 13/14-84D.

ENGINES RENUMBERED

9309/15 renumbered 7331/7 respectively ; 11127 and 11702 renumbered D2221 and D2702 respectively.

ENGINES RECLASSIFIED

Engine 67661 " VI " to " V3 ".

MULTIPLE UNIT DIESELS (8 weeks ending 13/6)

New : Motor Brake Second : M50962/3/4/5/6/7/8/9 ; **Motor Second :** E51001/2/3/6 ; **Motor Brake Second :** SC51030/1/2/3/4/5/6/7/8/9/40 ; **Motor Brake Composite :** W51067/8/9 ; **Motor Second :** W51095/6/7 ; **Motor Brake Second :** E51167/8/9/72 ; **Motor Brake Second :** E51433/4/43/4, SC51445/6/7/8/9/50/1/86/7/8/9/90/1/2/3/4; **Motor Composite :** E51503/4/13/4, SC51515/6/7/8/9/20/1 ; **Motor Brake Second :** M51591/2/3/4 ; **Driving Trailer Composite :** M56245/6/7/8/9/50/1/2, SC56475/6/7/8/9/80/1/2/3 ; **Trailer Composite :** SC59403/4/5 ; **Trailer Buffet Second :** W59426/7/8; **Trailer Second :** E59462/3/4/7 ; **Trailer Composite :** E59539/40/1/2, SC59543/4/5/6/7/8/9 ; **Trailer Second :** M59589/90 ; **Trailer Second :** M59619/20 ; **Four-wheel rail-bus :** SC79968.

Letters to the Editor

Road v. Rail

Sir,—I must congratulate Mr. William Fenton for putting into print at last (June issue) some of the facts relating to the unfair advantages enjoyed by road operators about which the public at large are not aware.

Similar circumstances appertain throughout the world but the public in many foreign countries are not left in ignorance. For instance in the United States, where they are in a position to do so, the railways bring these inequalities to the notice of the general public through a forceful series of advertisements. Unfortunately in this country it would not be politic for the B.T.C. to carry out such a campaign ; therefore, it is up to all those whose interest it is to see the railways prosper to make these facts known to their friends and acquaintances and to put an end to these unfair comparisons.

Northampton D. E. MARTYN

Sir,—I am certainly in agreement with all Mr. William Fenton says. The present balance sheet between road and rail is a very unfair one.

I think whether a modernisation scheme is carried out or not, some help on the lines suggested by Mr. Fenton will have to come sooner or later. Recently I saw a suggestion by the Governor of New Jersey, that some of the huge profits made by the U.S. toll roads should be made available to help the U.S. railroads.

In effect, as things are the whole idea of nationalisation is lost. If it was right to denationalise the road transport, it would have been right to de-nationalise the railways as well, but I can't see how both can be made to work as they are with no controls at all.

Woking D. B. CUTLACK

Sir,—As a railway enthusiast I am anxious to see our railways make a success of the carriage of those traffics for which they are so eminently suited. As a motorist, however, I cannot allow the statements of your correspondent Mr. Fenton in the June issue to pass unchallenged.

It should be remembered that a so called " Road Tax " is paid every year by the long-suffering motorist who has received little in return for it since prewar days. For too many years successive governments have treated this lucrative fund as an item of general exchequer income. Because a paltry few miles of motorway have now been constructed (and even these so imperfectly as to be incapable of withstanding a British winter), it cannot be said that the motorist is subsidised. Rather is he at last receiving a very small fraction of the things for which he has been paying over the past twenty years.

Whitley Bay B. D. CASTEL

Train services in the S.E. Midlands

Sir,—The abandonment of all local passenger services in the South-East Midlands is long overdue. The problem then is just how far out of London should the commuter's services run. On the Met. & G.C. Joint Line, Aylesbury is the right terminus, without doubt. On the G.W. & G.C. Joint Line presumably either High Wycombe or Princes Risborough will be chosen ; the Little Kimble line is quite redundant in view of the frequent interval service which Thames Valley buses provide between High Wycombe, the Risboroughs, and Aylesbury.

In your May issue Mr. Hazeldine suggested that a service be provided by railway from the South Bucks area to Bletchley via the Claydon spur. Local traffic over this line would be negligible—the only town served intermediately is Winslow, which has already a direct and badly-patronised bus service to and from Aylesbury. He claims, however, that the service would prove popular as a feeder from the residential and industrial areas of South Bucks to the West Coast Route.

I see three main reasons why the proposed service would not be a business proposition. Firstly, the service northward from Bletchley is at present poor and it is not reasonable to expect the L.M.R. to stop any more expresses on a high-speed section of open line. Secondly, despite the " immediate positive reaction " to the introduction in past years of a High Wycombe stop in the schedule of a Birmingham train, the number of passengers now travelling on the " Inter-City " and the Birkenhead train between High Wycombe and places north is tiny. Lastly, South Bucks. is a rich county with a high and rising ownership of modern cars.

The amount of wasted mileage run by local trains in the South Midlands is enough to make one weep. Let us hope that Mr. Blee and Mr. Hammond, who both seem progressively-minded, will winnow the chaff from the corn with more zest than their precursors in office.

Oxford J. D. EDWARDS

The layout at Cheltenham Lansdown

Sir,—The captions to J. D. Chritchlow's photographs of Lansdown Junction, Cheltenham in the June number do not state the situation correctly. The double line connection shown in the top picture was not the connection from Lansdown station to the W.R. Honeybourne line and thence to the M. & S.W.J.R., but a temporary connection installed for the second stage of the drainage and blanketing work at Lansdown Junction, to enable trains to and from Lansdown station to use the W.R. lines from Malvern Road and St. James through the new southern arch of Lansdown Road bridge.

The first stage of this work required possession of the area through this new southern arch and of the junction with the M. & S.W.J. line, in which area the rails were removed. It was at this stage in October 1958, therefore, that the connection to the M. & S.W.J. line from Lansdown station was actually cut. A temporary connection from the W.R. route, running the opposite way to that seen in J. D. Chritchlow's photo, was installed to enable W.R. trains to use the northern or Midland arch of the bridge.

The only train each way from the M. & S.W.J.R. to Cheltenham now runs to and from Malvern Road and St. James—and, incidentally, the northbound train is timed to arrive at Malvern

Road three minutes after the departure of a Cardiff-Birmingham (Snow Hill) diesel train; the M. & S.W.J. line train is daily held at Lansdown Junction outer home signal for the diesel to precede. In the opposite direction a reasonable connection is made after a southbound diesel to Cardiff has left. It looks very much as if the M. & S.W.J. line is slowly and painlessly being put to sleep.

Might I, through your columns, suggest to the authorities that without extra mileage a reasonable service between Birmingham (Snow Hill), Cheltenham (with connection from Gloucester), Southampton and Portsmouth could be given by running a train in substitution for the present useless service, leaving Cheltenham soon after the departure of the 9.20 a.m. Cardiff diesel and running through to Southampton and possibly Portsmouth Harbour; it could return to arrive at Malvern Road before either the 6.27 or 6.55 p.m. diesels. Such a service would provide a much-wanted connection to the South Coast and Isle of Wight from Cheltenham and Gloucester, from both of which towns the road service is also very bad.

Banstead E. C. B. THORNTON

No connection with next door

Sir,—The Western Region holiday guide, in its description of Devon, completely ignores the Southern line from Plymouth to Okehampton, and in fact says that Okehampton should be reached by Western National bus. Now there is no through bus service between Plymouth and Okehampton and the only way of making the journey by bus is to take Route 83 from Plymouth to Tavistock, which is slower and more expensive than the train, there to connect with Route 118, a bus whose main purpose is to connect outlying villages, and which follows an extremely roundabout route to Okehampton. Moreover, it only runs on Tuesdays and Saturdays. This inconvenient and expensive journey can be avoided by using Southern Region trains, which provide a good through service on every weekday and Sunday. Cheap fares are available, and no Okehampton inhabitant who uses public transport would think of going any other way. However, the Southern holiday guide redresses the balance by advising passengers from Plymouth to Yelverton to use the bus and makes no mention of the W.R. trains serving this place!

Addiscombe D. L. CANDY

The Penistone viaduct disaster

Sir,—I would like to make a correction to the article in the May issue on "The Huddersfield Penistone line and Branches" concerning the L. & Y.R. tank engine that fell through the arches of the viaduct at Penistone in 1916. Considerable difficulty was experienced in getting the engine up again, as it was not possible to get near it with lifting tackle owing to the dangerous condition of the structure. A special slipway was constructed and the engine taken practically to pieces and hauled up in parts, which were placed into wagons and sent to Horwich works. These were re-assembled with some additional new parts. The details of these engines being standard with many other Horwich engines, there was no difficulty in obtaining the necessary spares for rebuilding, thereby enabling the engine to be returned to its shed at Low Moor, looking no worse for its remarkable adventure. My father, as a driver starting on the old G.C.R., remembers the incident quite well.

Barnsley V. C. SILVERWOOD

New reading on railways

FAMOUS RAILWAY STATIONS OF THE WORLD. By Ernest F. Carter. Frederick Muller. **9s. 6d.**

The publishers claim that too little attention has been paid in "popular" railway literature to the fixed equipment and offer this book as an attempt to portray the variety of architecture, situation and traffic of stations throughout the world. It does not altogether succeed. "Famous" is broadly interpreted and many of the stations mentioned hardly merit the adjective. To draw the line between the noteworthy and the merely important is, perhaps, hard, but the monumental structure at Helsinki should have qualified for description. It might have been better to settle for a smaller number of stations generally accounted notable and treat them in some detail, for, lacking this selectivity, the book becomes little more than a catalogue. There are numerous errors, both literal and factual, such as the statement that the Austerlitz station in Paris is of more recent construction than the Gare d'Orsay. As for the author's opinions, York, Newcastle, Bristol, Cambridge and Dublin Kingsbridge are surely enough to refute his charge that most of the more important stations in this country are "very uninspiring structures devoid of any particular architectural beauty." Bearing in mind the author's wide terms of reference the half-tones are good, but it is a pity that the example of a typical (not famous) English country station should be one on the now abandoned Meon Valley line.

"L.S.W.R."

GREAT EASTERN. By Cecil J. Allen. Ian Allan. **2s. 6d.**

On no section of British Railways has modernisation made a deeper mark than on the Great Eastern Line. Mr. Cecil J. Allen began his career on the Great Eastern Railway half a century ago, knows the system intimately and has given us a comprehensive history of it. In the present book he first sketches the development of the line in G.E.R. and L.N.E.R. days and then describes the notable transformation of its services and motive power which was ushered in by electrification between Liverpool Street and Shenfield and has progressed to the widespread adoption of diesel traction on both main and branch lines and the inauguration in this country of the 25,000-volt a.c., 50-cycle system. To both the transport student and the East Anglian passenger and trader, who are now enjoying a faster and more rational service than ever before, this inexpensive and well illustrated account of a most successful railway renascence should equally appeal.

B.G.W.

●

A RAILWAY PHOTOGRAPHIC CLUB

The Dia-Dema Colour Club Ltd. (60 Berners Street, London, W.1,) plans to establish a comprehensive collection of 35 mm. colour transparencies recording in all aspects the development of both British and Continental railways, and already offers a wide range of subjects. Membership of the club entitles the subscriber to the receipt of four or eight new transparencies a year, according to the class of his subscription, and also a handsome album for the storage of his transparencies; the Diadema Club also offers a useful battery-operated pocket viewer at 27s. 6d. to its members. The Club's recent first volume of British railway subjects now contains over 60 transparencies. History is covered by some excellent shots of the preserved locomotives of British Railways' a number of them taken inside York museum, and of the scale models exhibited in London's Science Museum. The colour faithfulness to the original of the present-day subjects is occasionally variable—the "Deltic's" speed whiskers, for example, are bleached white, and so is the front-end "V" of a Derby multiple-unit, while here and there unfortunate sky reflections from boiler-tops have not been avoided. On the other hand, several of the recent shots, especially an "A4", a Class "9" 2-10-0 and a Birmingham/Sulzer Type "2" diesel, are first-class records. So far the Club has concentrated on rolling stock, but we hope that it will soon turn its cameras on the more general railway scene, particularly where this is soon to be transformed by modernisation. This is a valuable innovation in the railway world which should be sure of a warm response.

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The Northern Railfans Club—This Club's programme for August includes the following visits: **Saturday, August 8**—Coach tour from Manchester to 26C Horwich Works 24D 24A 24D Skipton Hellifield and Bury (Mr. Hawley); **Sunday, August 9**—Crewe Works, 11 a.m. (Mr. Smith); **Sunday, August 16**—Crewe Works, 2.00 p.m.; **Sunday, August 16**—Overnight trip to Gloucester Bristol Bath and Swindon (Mr. Hawley); **Sunday, August 23**—Glasgow and Edinburgh sheds. Party Rate Rail travel from Manchester, Coach Tour of Depots; **Saturday, August 29**—Manchester sheds and Horwich Works. Gorton Works, etc. (Mr. Smith); **Sunday, August 30**—Crewe Works.

Send S.A.E. for details to Divisional Secs. Mr. C. B. Brown, 17 Glen View Street, Cornholme, Todmorden, Lancs., Mr. T. H. Smith, 380 Underwood Lane, Crewe, Cheshire, or to the Club President, Mr. Ray A. Hawley, "Torview", Goostrey, Crewe, Cheshire.

Birmingham L.S.C.—Meetings on Wednesday evenings, fortnightly, 7.30 p.m. **Please note new address:** Mr. R. W. Murray, 62 Fashoda Road, Selly Park, Birmingham 29. All enquiries and trip bookings should be forwarded by post and a stamped, addressed envelope enclosed if a reply is expected. No callers, please, postal applications only. The following visits have been arranged: **August 30 (Sunday)**—S.L.S. Special Train hauled by Midland Compound 41000 restored and painted in original Midland livery to Doncaster Depot and Works, York Depot and Railway Museum, Depart New Street Station 8.45 a.m., arrive back at 9.30 p.m. Fares: 15s. under 16 years, 25s. Adult; **September 6**—Carlisle Area and Dumfries; **September 13**—Bradford and Leeds area; **September 20**—Crewe Works and Chester Depots.

Wessex Railway Society (Bournemouth L.S.C.)—The following visits have been arranged: **August 8/22**—Holiday tour of Scotland; **August 16**—Brighton; **August 23**— Swindon Shed and Works. Full details from Mr. Heckford, 231 Ringwood Road, Poole. Details of membership from Mr. S. Cherrett, 93 Boscombe Grove Road, Bournemouth.

A.M.R. East Midlands L.S.C.—the following fixtures have been arranged: **August 10-15**—Scotland. There may be a few spare seats for the coach trips on **August 11-13** to Glasgow and Edinburgh Sheds and any spotters in Scotland are invited to apply for details to the address below enclosing S.A.E.: **August 30**—Manchester from Nottingham; **September 6**—Manchester from Leicester; **September 20**—Swindon and Eastleigh. Full details from Mr. J. H. Gibbons, 82 Arkwright Street, Nottingham.

The Railway Society of Great Britain formerly **The Midland Counties Railway Society** welcomes the application for membership from all railway enthusiasts. All enquiries with 3d. S.A.E. to Ronald H. Bruce, "Noster Domus", 63 Farcroft Estate, Broad Lane, Coventry. Future visits include: **Sunday, August 16**—Crewe Works, Chester (3), Wrexham (2), Oswestry, Shrewsbury and Wellington; **Sunday, August 30**—Banbury, Oxford, Didcot, Reading, Slough, Southall, Willesden, Old Oak Common, Bletchley; **Sunday, September 13**—Royston, Normanton, Copley Hill, Holbeck, Neville Hill, Stourton, Wakefield, Farnley Junction, Sowerby Bridge, Low Moor, Bradford, Mirfield, and Huddersfield and Barnsley.

Bristol Locomotive Society (affiliated to the I.A.L.S.C.—The following fixtures have been arranged: **Sunday, September 6**—Crewe Works, 84G, 89A, 84J, 84K, 5D, 5C. Full details from the Secretary, Mr. G. J. Lusher, 6C Cotham Lawn Road, Bristol 6.

Scottish Railfans—Forthcoming fixtures include the following visits. **August 30**—Rail to London for Coach Tour of London Area sheds. Total cost about £3. 10s. (half). Details from Mr. C. Minay, 5 Osborne Terrace, Edinburgh 12.

The South Bedfordshire Locomotive Club (affiliated to the I.A.L.S.C.) invites railway enthusiasts from Bedfordshire and surrounding counties to join in the clubs activities. During **August** it is hoped to include visits to Bristol, Doncaster, London and a week-end trip to the Manchester and Liverpool Area. Further details of these visits and of membership can be obtained from Mr. J. Slaughter, 40 St. Augustine Avenue, Luton, Beds., enclosing a S.A.E. PLEASE NOTE NEW ADDRESS. All other enquiries to the Secretary, Mr. J. F. Crossman, 20 St. Monica's Avenue, Luton, Beds.

Hatfield—A new branch of this club has been formed to cater for spotters from the Mid-Herts Area. Full details of branch membership can be obtained from the Branch Secretary, Mr. R. Nixon, 24 Georges Wood Road, Brookmans Park, Hatfield, Herts, enclosing a S.A.E.

Home Counties Railway Club (Affiliated to the I.A.L.S.C.) can now accept Locospotters from London and surrounding Counties. Good programme of visits. Full details from Mr. R. Bowyer, 32 Rucklidge Ave., London, N.W.10, enclosing a S.A.E.

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